

Basel II Pillar 3 Report 2009

Passion to Perform



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1. Introduction

Since 2008 Deutsche Bank Group operates under the Basel II capital framework (“Basel II”), the revised international capital adequacy standards as recommended by the Basel Committee on Banking Supervision in 2004. This framework consists of three pillars each of them concentrating on a different aspect of banking regulation.

- Pillar 1 makes recommendations for calculation of minimum capital requirements.
- Pillar 2 discusses the key principles of supervisory review and risk management guidance.
- Pillar 3 complements the first two pillars of Basel II by requiring a range of disclosures on capital and risk assessment processes, aimed at encouraging and reinforcing market discipline.

The European Union enacted the Capital Requirements Directive, which adopted the Basel II capital framework. Germany adopted the Capital Requirements Directive into national law and codified the disclosure requirements related to Pillar 3 in Section 26a of the German Banking Act (“Kreditwesengesetz” or “KWG”) and in Part 5 of the German Regulation on Solvency (“Solvabilitätsverordnung”, “Solvency Regulation” or “SolvV”).

The Deutsche Bank group of institutions (also referred to as “the Group”) has applied the revised capital framework on the basis of the Group’s internal models for measuring credit risk, market risk and operational risk, as approved by the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, referred to as “BaFin”). This report is the Group’s second Basel II Pillar 3 report. It is published for the financial year ending December 31, 2009.

As it is not required by regulation, this report has not been audited by the Group’s external auditors. However, it also includes information that is contained within the audited consolidated financial statements as reported in the Group’s Financial Report 2009.

2. Scope of Application

Deutsche Bank Aktiengesellschaft (“Deutsche Bank AG”), headquartered in Frankfurt am Main, Germany, is the parent institution of the Deutsche Bank group of institutions, which is subject to the supervisory provisions of the Banking Act and the SolvV. Under the Banking Act, a regulatory group of institutions consists of a credit institution (also referred to as “bank”) or financial services institution, as the parent company, and all other banks, financial services institutions, investment management companies, financial enterprises, ancillary services enterprises and payment institutions which are subsidiaries in the meaning of Section 1 (7) KWG. Such entities are fully consolidated for the Group’s regulatory reporting. Insurance companies and companies outside the finance sector are not included.

For financial conglomerates, however, insurance companies are included in an additional capital adequacy (also “solvency margin”) calculation. The Group has been designated as a financial conglomerate following the acquisition of Abbey Life Assurance Company Limited in October 2007. The Group’s solvency margin as a financial conglomerate remains dominated by its banking activities.

The regulatory principles of consolidation are not identical to those for the Group’s financial statements, which are prepared in accordance with the International Financial Reporting Standards (“IFRS”). Nonetheless, the majority of subsidiaries according to the Banking Act are also fully consolidated in accordance with IFRS in the Group’s consolidated financial statements and vice versa. For more detailed information about the Group’s accounting policies on consolidation please see Note [1] “Significant Accounting Policies” in the Group’s Financial Report 2009.

The main differences between regulatory and accounting consolidation are:

- Entities which do not form part of the regulatory group of institutions because they do not belong to the banking industry, but which are controlled by the Deutsche Bank Group according to IFRS are included in the consolidated financial statements.
- Most of the Group’s Special Purpose Entities (“SPEs”) consolidated under IFRS do not meet the specific consolidation requirements pursuant to Section 10a KWG and are consequently not consolidated within the regulatory Group. However, the risks resulting from the Group’s exposures to such entities are reflected in the Group’s regulatory capital requirements.
- Some entities included in the regulatory scope of application are not consolidated for accounting purposes but are treated differently, in particular using the equity method of accounting. There is only one entity within the Deutsche Bank group of institutions which is jointly controlled by its owners and consolidated on a pro-rata basis. It is accounted for under the equity method in the Group’s financial statements.

Section 10 (6) No. 1, 2, 3 and 5 KWG requires the deduction of participating interests in unconsolidated banking, financial and insurance entities from the Group's own funds when the Group holds more than 10 % of the capital (in case of insurance entities 20 % either of the capital or of voting rights unless included in the solvency margin calculation of the financial conglomerate). Since the Deutsche Bank Group is classified as a financial conglomerate, material investments in insurance entities amounting to at least 20 % of capital or voting rights are not deducted from the Group's own funds as they are included in the solvency calculation at financial conglomerate level.

In the following chapters the quantitative information presented refers to the regulatory Group unless another relevant scope is explicitly stated.

3. Capital Adequacy

3.1 Regulatory Capital

A bank's total regulatory capital, also referred to as "Own Funds", is divided into three tiers: Tier 1, Tier 2 and Tier 3 capital, and the sum of Tier 1 and Tier 2 capital is also referred to as "Regulatory Banking Capital".

- Tier 1 capital consists primarily of common share capital, additional paid-in capital, retained earnings and hybrid capital components such as noncumulative trust preferred securities. Common shares in treasury, goodwill and other intangible assets are deducted from Tier 1. Other regulatory adjustments according to the Banking Act entail the exclusion of capital from entities outside the group of institutions and the reversal of capital effects under the fair value option on financial liabilities due to own credit risk. Tier 1 capital without hybrid capital components is referred to as Core Tier 1 capital.
- Tier 2 capital consists primarily of cumulative trust preferred securities and long-term subordinated debt, as well as 45 % of unrealized gains on certain listed securities.

Certain items must be deducted from Tier 1 and Tier 2 capital. Primarily these include deductible investments in unconsolidated banking, financial and insurance entities where the Group holds more than 10 % of the capital (in case of insurance entities 20 % either of the capital or of voting rights unless included in the solvency margin calculation of the financial conglomerate); the amount by which the expected loss for exposures to central governments, institutions, corporate and retail exposures as measured under the Group's internal ratings based approach ("IRBA") model exceeds the value adjustments and provisions for such exposures; the expected losses for certain equity exposures; securitization positions not included in the risk-weighted assets ("RWA"); and the value of securities delivered to a counterparty plus any replacement cost to the extent the required payment by the counterparty has not been made within five business days after delivery provided the transaction has been allocated to the Group's trading book.

- Tier 3 capital consists mainly of certain short-term subordinated debt.

The amount of subordinated debt that may be included as Tier 2 capital is limited to 50 % of Tier 1 capital. Total Tier 2 capital is limited to 100 % of Tier 1 capital.

The regulatory banking capital and Tier 3 capital (together, “own funds”) are set forth further below and summarized in the following table.

Table 1 Regulatory Capital

Regulatory capital in € m.	Dec 31, 2009	Dec 31, 2008
Tier 1 capital		
Core Tier 1 capital		
Common shares	1,589	1,461
Additional paid-in capital	14,830	14,961
Retained earnings, common shares in treasury, equity classified as obligation to purchase common shares, foreign currency translation, minority interest	21,807	16,724
Items to be fully deducted from Tier 1 capital pursuant to Section 10 (2a) KWG (inter alia goodwill and other intangible assets) ¹	(10,238)	(10,125)
Items to be partly deducted from Tier 1 capital pursuant to Section 10 (6) and (6a) KWG		
Deductible investments in banking, financial and insurance entities	(2,120)	(771)
Securitization positions not included in risk-weighted assets	(1,033)	(279)
Excess of expected losses over risk provisions	(1,045)	(499)
Items to be partly deducted from Tier 1 capital pursuant to Section 10 (6) and (6a) KWG	(4,198)	(1,549)
Core Tier 1 capital total	23,790	21,472
Additional Tier 1 capital		
Noncumulative trust preferred securities	10,616	9,622
Additional Tier 1 capital total	10,616	9,622
Total Tier 1 capital pursuant to Section 10 (2a) KWG	34,406	31,094
Tier 2 capital		
Unrealized gains on listed securities (45 % eligible)	331	–
Cumulative trust preferred securities	294	300
Qualified subordinated liabilities	7,096	7,551
Items to be partly deducted from Tier 2 capital pursuant to Section 10 (6) and (6a) KWG	(4,198)	(1,549)
Total Tier 2 capital pursuant to Section 10 (2b) KWG	3,523	6,302
Total Tier 3 capital pursuant to Section 10 (2c) KWG	–	–
Total regulatory capital	37,929	37,396

¹ These items include a part of goodwill that can be retained in the Group's reporting to the German regulatory authorities pursuant to Section 64h (3) KWG amounting to € 462 million as of December 31, 2009 and € 971 million as of December 31, 2008.

Prospectuses with the exact terms and conditions of Deutsche Bank AG's share issues and of most Tier 1 hybrid instruments and Tier 2 instruments are published and can be obtained from Deutsche Bank, Investor Relations.

The following table reconciles shareholders' equity according to IFRS to Tier 1 capital pursuant to Section 10a KWG.

Table 2 Reconciliation of IFRS Shareholders' Equity to Tier 1 Capital

in € m.	Dec 31, 2009	Dec 31, 2008
Total shareholders' equity	36,647	30,703
Unrealized net gains (losses) on financial assets available for sale	121	882
Unrealized net gains (losses) on cash flow hedges	136	349
Accrued future dividend	(466)	(310)
Active book equity	36,438	31,624
Goodwill and intangible assets	(10,169)	(9,877)
Minority interest	1,322	1,211
Other (consolidation and regulatory adjustments)	397	63
Noncumulative trust preferred securities	10,616	9,622
Items to be partly deducted from Tier 1 capital	(4,198)	(1,549)
Tier 1 capital	34,406	31,094

3.2 Regulatory Capital Requirements

Under the Basel II framework, overall capital requirements have to be calculated and compared with the regulatory capital described above. The overall capital requirements are frequently expressed in RWA terms whereby capital requirements are 8 % of RWA.

In December 2007 the BaFin approved the use of the advanced IRBA for the majority of the Group's counterparty credit risk positions. Additional advanced IRBA-related BaFin approvals have been obtained in the course of 2008 and 2009. The advanced IRBA constitutes the most sophisticated approach available under the Basel II regime. The remaining advanced IRBA eligible exposures are covered within the standardized approach either temporarily (where the Group seeks regulatory approval over time) or permanently (where exposures are treated under the standardized approach in accordance with Section 70 SolvV). More details on this topic are provided in chapters 6.1 "Advanced Internal Ratings Based Approach" and 6.4 "Standardized Approach".

The table below shows a breakdown of the total capital requirements and risk-weighted assets by risk type. The counterparty credit risk within the advanced IRBA and the standardized approach is broken down into different regulatory exposure classes. The capital requirement for securitization positions is separately displayed and is calculated substantially using the IRBA approach; only a minor exposure portion is captured under the standardized approach. More details on the treatment of securitization positions can be found in chapter 7 “Securitization”.

For equity investments entered into before January 1, 2008, the Group uses the transitional arrangement to exempt these positions from an IRBA treatment and applies the grandfathering rule, using a 100 % risk weighting. For more recent investments in equity positions entered into since January 1, 2008, the Group applies the simple risk weight approach within the IRBA. For more details regarding equity investments please refer to chapter 9.1 “Equity Investments in the Banking Book”.

The calculation of regulatory market risk capital requirements (for general and specific market risk) is based on an internal value-at-risk model, which was approved by the BaFin in October 1998. More details on the internal value-at-risk model are provided in chapter 8 “Trading Market Risk”.

In December 2007, the Group obtained approval to apply the advanced measurement approach (“AMA”) to determine its regulatory operational risk capital requirements. The table below shows the AMA-based capital requirement for operational risk. Details on the Group’s AMA model are given in chapter 10 “Operational Risk”.

Table 3 Regulatory Capital Requirements and RWA

Regulatory capital requirements and RWA	Dec 31, 2009		Dec 31, 2008	
	Capital requirements	RWA	Capital requirements	RWA
in € m.				
Counterparty credit risk				
Advanced IRBA				
Central governments	139	1,739	286	3,578
Institutions	1,319	16,485	1,886	23,582
Corporates	8,688	108,598	10,876	135,950
Retail	1,754	21,930	1,728	21,595
Other non-credit obligation assets	266	3,324	260	3,246
Total advanced IRBA	12,166	152,076	15,036	187,951
Standardized approach				
Central governments	4	45	40	504
Regional governments and local authorities	6	72	3	37
Other public sector entities	4	48	8	105
Multilateral development banks	–	–	–	–
International organizations	–	–	–	–
Institutions	37	465	89	1,118
Covered bonds issued by credit institutions	14	174	17	209
Corporates	1,614	20,179	1,508	18,852
Retail	664	8,295	671	8,384
Claims secured by real estate property	79	987	57	704
Collective investment undertakings	–	–	–	–
Other items	15	193	11	139
Past due items	96	1,206	79	988
Total standardized approach	2,533	31,664	2,483	31,040
Risk from securitization positions				
Securitizations (IRBA)	1,451	18,135	997	12,457
Securitizations (standardized approach)	102	1,271	32	403
Total risk from securitization positions	1,553	19,406	1,029	12,860
Risk from equity positions				
Equity positions (grandfathered)	361	4,508	528	6,598
Equity positions (IRBA simple risk-weight approach)	735	9,192	730	9,121
Exchange-traded	148	1,852	100	1,249
Non-exchange-traded	587	7,340	630	7,872
Total risk from equity positions	1,096	13,700	1,258	15,719
Settlement risk	13	157	3	40
Total counterparty credit risk	17,361	217,003	19,809	247,610
Market risk in the trading book				
Internal model approach	1,990	24,880	1,880	23,496
Operational risk				
Advanced measurement approach	2,527	31,593	2,930	36,625
Total regulatory capital requirements and RWA	21,878	273,476	24,619	307,732

Total regulatory capital and RWA requirements have decreased between December 31, 2009 and December 31, 2008 by € 2.7 billion and € 34.3 billion respectively. The RWA decrease is materially from counterparty credit positions under the advanced IRBA approach and therein primarily due to lower derivative exposure in the Group's corporate and institutional segments and to a lesser extent lower RWA in relation to loans in the corporate segment. Other largely offsetting effects included downgrade related RWA increases in securitization positions and lower operational risk RWA.

3.3 Regulatory Capital Ratios

The German Banking Act and the German Regulation on Solvency reflect the capital adequacy rules of Basel II and require German banks to maintain an adequate level of capital in relation to their regulatory capital requirements comprising counterparty credit risk, operational risk and market risk. Counterparty credit risk and operational risk must be covered with Tier 1 capital and Tier 2 capital (together “regulatory banking capital”). Market risk must be covered with regulatory banking capital (to the extent not required to cover counterparty credit and operational risk) or Tier 3 capital (together with regulatory banking capital, “own funds”).

The following table shows the Group’s eligible regulatory capital available to cover the minimum capital requirements by risk type.

Table 4 Coverage of Minimum Capital Requirements

Coverage of minimum capital requirements	Dec 31, 2009		Dec 31, 2008	
	Regulatory capital requirements	Available regulatory capital	Regulatory capital requirements	Available regulatory capital
in € m.				
Counterparty credit risk and operational risk	19,887	37,929	22,739	37,396
Market risk	1,991	18,041	1,880	14,657

As of December 31, 2009 and as of December 31, 2008 the Group held regulatory capital well above the required minimum standards.

Other principal measures to assess the capital adequacy of a credit institution from a regulatory perspective are regulatory capital ratios, defined as regulatory capital divided by risk-weighted assets. As of December 31, 2009, the Tier 1 capital ratio, the Core Tier 1 capital ratio and the total capital ratio for the Group amounted to 12.6 %, 8.7 % and 13.9 %, respectively. As of December 31, 2008, the three ratios mentioned above, amounted to 10.1 %, 7.0 % and 12.2 %, respectively.

Basel II requires the deduction of goodwill from Tier 1 capital. However, for a transitional period the partial inclusion of certain goodwill components in Tier 1 capital is allowed pursuant to Section 64h (3) KWG. While such goodwill components are not included in the regulatory capital and capital adequacy ratios shown above, the Group makes use of this transition rule in its capital adequacy reporting to the German regulatory authorities.

As of December 31, 2009, the transitional item amounted to € 462 million. In the Group’s reporting to the German regulatory authorities, the Tier 1 capital, total regulatory capital and the risk-weighted assets shown above were increased by this amount. Correspondingly, the Group’s Tier 1 and total capital ratios reported to the German regulatory authorities including this item were 12.7 % and 14.0 %, respectively, on December 31, 2009. As of December 31, 2008, the ratios amounted to 10.4 % and 12.4 %, respectively.

Regulatory capital ratios for the Group's significant subsidiaries, defined as those entities whose relative individual contribution to the Group's risk-weighted assets exceeds 5% of the Group's overall RWA, are not disclosed as they meet the conditions of and have applied the exemptions codified in Section 2a KWG. As a result, they are exempted from the obligation to comply with certain regulatory requirements of the Banking Act on a standalone basis, including solvency calculations and reporting of regulatory capital ratios. The Group's only significant entities, Deutsche Bank AG and Deutsche Bank Privat- und Geschäftskunden AG, as well as three other entities, namely Berliner Bank AG & Co. KG, norisbank GmbH and DWS Finanz-Service GmbH do not calculate and report capital ratios due to the application of this exemption. These exemptions can only be applied if there is no material practical or legal impediment to the prompt transfer of own funds or repayment of liabilities from Deutsche Bank AG to the respective subsidiaries or from all subsidiaries in the Group to Deutsche Bank AG.

Failure to meet minimum capital requirements can result in orders to suspend or reduce dividend payments or other profit distributions on regulatory capital and discretionary actions by the BaFin that, if undertaken, could have a direct material effect on the Group's businesses. The Group complied with the regulatory capital adequacy requirements in 2009. The Group's subsidiaries which are not included in the regulatory consolidation did not report any capital deficiencies in 2009.

3.4 Internal Capital Adequacy Assessment Process (ICAAP)

The Group not only reviews its regulatory capital ratios in line with the set targets, but it also assesses and continuously monitors its risk bearing capacity. The Group's primary internal measure to assess the impact of very severe unexpected losses across the different risk types is economic capital, which is also planned as part of the risk and capital strategy as described further below. Economic capital is also a key component to allocate the Group's book equity to the business divisions. For further details on the Group's economic capital please refer to chapter 4.5 "Economic Capital Requirements".

The primary measure to assess the Group's risk bearing capacity is a ratio of the Group's active book equity divided by the economic capital plus goodwill and intangibles. A ratio of more than 100% signifies that the active book equity adequately covers the aforementioned risk positions. This ratio has been continuously above 100% during 2009 and stood at an annual high of 118% as of December 31, 2009, reflective of a growth in active book equity over the course of the year.

4. Risk and Capital Management of the Group

4.1 Risk and Capital Management Principles and Organization

Market Development

Confidence and liquidity in financial markets improved during much of 2009, underpinned by continued government and central bank support measures. Equity markets recovered sharply, volatility subsided, and corporate credit and interbank spreads approached, and in some cases returned to, pre-crisis levels. Issuance volumes in corporate bond markets were very strong as investor risk appetite improved. However, securitization markets saw only a more modest recovery, despite extensive liquidity support and outright purchases of assets by governmental institutions. Issuance volumes have remained low, and prices depressed, indicating that confidence in securitization has not yet been restored.

Conditions in the wider economy remained challenging. Most developed economies returned to positive growth in the second half of 2009, but the pace of recovery remained relatively subdued and reliant on public sector stimulus measures. Economic headwinds persisted with unemployment increasing, weighing on household credit quality, and corporate defaults rising further. Residential real estate prices continued to fall in many developed markets, but the German market remained stable. Towards the end of the year, large fiscal deficits and sharply rising public debt, mainly a reflection of the deep economic recession and the cost of financial sector support measures, led to growing concerns in financial markets over sovereign risk.

Risk and Capital Management

The wide variety of the Group's businesses requires it to identify, measure, aggregate and manage its risks effectively, and to allocate capital among the businesses appropriately. The Group manages risk and capital through a framework of principles, organizational structures, as well as measurement and monitoring processes that are closely aligned with the activities of the Group's divisions. The importance of a strong focus on risk management and the continuous need to refine risk management practice has become particularly evident during the financial market crisis. While the Group's risk and capital management continuously evolves and improves, there can be no assurance that all market developments, in particular those of extreme nature, can be fully anticipated at all times.

Risk and Capital Management Principles

The following key principles underpin the Group's approach to risk and capital management:

- The Group's Management Board provides overall risk and capital management supervision for its consolidated Group. The Group's Supervisory Board regularly monitors its risk and capital profile.
- The Group manages credit, market, operational, liquidity, business, legal and reputational risks as well as its capital in a coordinated manner at all relevant levels within the Group's organization. This also holds true for complex products which the Group typically manages within its framework established for trading exposures.
- The structure of the Group's integrated legal, risk & capital function is closely aligned with the structure of its group divisions.
- The legal, risk & capital function is independent of the Group's divisions.

Risk and Capital Management Organization

The Group's Chief Risk Officer, who is a member of the Management Board, is responsible for the Group-wide credit, market, operational, liquidity, business, legal and reputational risk management as well as capital management activities and heads the Group's integrated legal, risk & capital function.

Two functional committees, which are both chaired by the Group's Chief Risk Officer, are central to the legal, risk & capital function.

- The Group's Risk Executive Committee is responsible for management and control of the aforementioned risks across the consolidated Group. To fulfill this mandate, the Risk Executive Committee is supported by sub-committees that are responsible for dedicated areas of risk management, including several policy committees and the Group Reputational Risk Committee.
- The responsibilities of the Capital and Risk Committee include risk profile and capital planning, capital capacity monitoring and optimization of funding.

Dedicated legal, risk & capital units are established with the mandate to:

- Ensure that the business conducted within each division is consistent with the risk appetite that the Capital and Risk Committee has set within a framework established by the Management Board;
- Formulate and implement risk and capital management policies, procedures and methodologies that are appropriate to the businesses within each division;
- Approve credit, market and liquidity risk limits;
- Conduct periodic portfolio reviews to ensure that the portfolio of risks is within acceptable parameters; and
- Develop and implement risk and capital management infrastructures and systems that are appropriate for each division.

The heads of the Group's legal, risk & capital units, which are amongst the members of the Group's Risk Executive Committee, are responsible for the performance of the units and report directly to the Group's Chief Risk Officer.

The Group's finance and audit departments support the legal, risk & capital function. They operate independently of both the group divisions and of the legal, risk & capital function. The role of the finance department is to help quantify and verify the risk that the Group assumes and ensure the quality and integrity of risk-related data. The Group's audit department performs risk-oriented reviews of the design and operating effectiveness of its internal control procedures.

Risk and Capital Strategy

The legal, risk & capital function annually develops its risk and capital strategy in an integrated process together with the group divisions and Finance, ensuring Group-wide alignment of risk and performance targets. The strategy is ultimately presented to, and approved by, the Management Board. Subsequently, this plan is also presented to, and discussed with, the Risk Committee of the Supervisory Board.

Targets and projections are set for various parameters and different levels of the Group. Performance against these targets is monitored regularly and a report on selected important and high-level targets is brought to the direct attention of the Chief Risk Officer and/or the Management Board. In case of a significant deviation from the targets, it is the responsibility of the divisional legal, risk & capital units to bring this to the attention of their superiors and ultimately the Chief Risk Officer if no mitigation or mitigation strategy can be achieved on a subordinated level.

Amendments to the risk and capital strategy must be approved by the Chief Risk Officer or the full Management Board, depending on significance.

4.2 Categories, Quantification and Reporting of Risk

The most important risks the Group assumes are specific banking risks and reputational risks, as well as risks arising from the general business environment.

Specific Banking Risks

The Group's risk management processes distinguish among four kinds of specific banking risks: credit risk, market risk, operational risk and liquidity risk.

- **Credit risk** arises from all transactions that give rise to actual, contingent or potential claims against any counterparty, borrower or obligor (which the Group refers to collectively as "counterparties"). The Group distinguishes between three kinds of credit risk:
 - **Default risk** is the risk that counterparties fail to meet contractual payment obligations.
 - **Country risk** is the risk that the Group may suffer a loss, in any given country, due to any of the following reasons: a possible deterioration of economic conditions, political and social upheaval, nationalization and expropriation of assets, government repudiation of indebtedness, exchange controls and disruptive currency depreciation or devaluation. Country risk includes transfer risk which arises when debtors are unable to meet their obligations owing to an inability to transfer assets to nonresidents due to direct sovereign intervention.
 - **Settlement risk** is the risk that the settlement or clearance of transactions will fail. It arises whenever the exchange of cash, securities and/or other assets is not simultaneous.

- **Market risk** arises from the uncertainty concerning changes in market prices and rates (including interest rates, equity prices, foreign exchange rates and commodity prices), the correlations among them and their levels of volatility.
- **Operational risk** is the potential for incurring losses in relation to employees, contractual specifications and documentation, technology, infrastructure failure and disasters, external influences and customer relationships. This definition includes legal and regulatory risk, but excludes business and reputational risk.
- **Liquidity risk** is the risk arising from the Group's potential inability to meet all payment obligations when they come due or only being able to meet these obligations at excessive costs.

Reputational Risk

Within the Group's risk management processes, the Group defines reputational risk as the risk that publicity concerning a transaction, counterparty or business practice involving a client will negatively impact the public's trust in the Group's organization.

Several policies and guidelines form the framework of the Group's reputational risk management. The primary responsibility for the identification, escalation and resolution of reputational risk issues resides with the business divisions. The risk management units assist and advise the business divisions in ascertaining that reputational risk issues are appropriately identified, escalated and addressed.

The most senior dedicated body for reputational risk issues is the Group Reputational Risk Committee (GRRC). It is a permanent sub-committee of the Risk Executive Committee and is chaired by the Chief Risk Officer. The GRRC reviews and makes final determinations on all reputational risk issues, where escalation of such issues is deemed necessary by senior business and regional management, or required under other Group policies and procedures.

Business Risk

Business risk describes the risk the Group assumes due to potential changes in general business conditions, such as the Group's market environment, client behavior and technological progress. This can affect the Group's results if the Group fails to adjust quickly to these changing conditions.

Insurance Specific Risk

The Group's exposure to insurance risk increased upon the 2007 acquisition of Abbey Life Assurance Company Limited and the 2006 acquisition of a stake in Paternoster Limited, a regulated insurance company. The Group is primarily exposed to the following insurance-related risks.

- **Mortality and morbidity risks** – the risks of a higher or lower than expected number of death claims on assurance products and of an occurrence of one or more large claims, and the risk of a higher or lower than expected number of disability claims, respectively. The Group aims to mitigate these risks by the use of reinsurance and the application of discretionary charges. The Group investigates rates of mortality and morbidity annually.
- **Longevity risk** – is the risk of faster or slower than expected improvements in life expectancy on immediate and deferred annuity products. The Group monitors this risk against the latest external industry data and emerging trends.
- **Expenses risk** – is the risk that policies cost more or less to administer than expected. The Group monitors these expenses by an analysis of the actual expenses relative to the budget. The Group investigates reasons for any significant divergence from expectations and takes remedial action. The Group reduces the expense risk by having in place (until 2010 with the option of renewal for two more years) an outsourcing agreement which covers the administration of the policies.
- **Persistency risk** – is the risk of a higher or lower than expected percentage of lapsed policies. The Group assesses the persistency rates annually by reference to appropriate risk factors.

The Group monitors the actual claims and persistency against the assumptions used and refines the assumptions for the future assessment of liabilities. Actual experience may vary from estimates, the more so as projections are made further into the future. Liabilities are evaluated at least annually.

To the extent that actual experience is less favorable than the underlying assumptions, or it is necessary to increase provisions due to more onerous assumptions, the amount of capital required in the insurance entities may increase.

The profitability of the Group's non unit-linked long-term insurance businesses depends to a significant extent on the value of claims paid in the future relative to the assets accumulated to the date of claim. Typically, over the lifetime of a contract, premiums and investment returns exceed claim costs in the early years and it is necessary to set aside these amounts to meet future obligations. The amount of such future obligations is assessed on actuarial principles by reference to assumptions about the development of financial and insurance risks.

For unit-linked investment contracts, profitability is based on the charges taken being sufficient to meet expenses and profit. The premium and charges are assessed based on actuarial principles by reference to assumptions about the development of financial and insurance risks.

As stated above, reinsurance is used as a mechanism to reduce risk. The strategy is to continue to utilize reinsurance as appropriate.

Risk Management Tools

The Group uses a comprehensive range of quantitative tools and metrics for monitoring and managing risks. As a matter of policy, the Group continually assesses the appropriateness and the reliability of its quantitative tools and metrics in light of the Group's changing risk environment. Some of these tools are common to a number of risk categories, while others are tailored to the particular features of specific risk categories. The following are the most important quantitative tools and metrics the Group currently uses to measure, manage and report the Group's risk:

- **Economic capital.** Economic capital measures the amount of capital the Group needs to absorb very severe unexpected losses arising from the Group's exposures. "Very severe" in this context means that economic capital is set at a level to cover with a probability of 99.98% the aggregated unexpected losses within one year. The Group calculates economic capital for the default risk, transfer risk and settlement risk elements of credit risk, for market risk, for operational risk and for general business risk. The Group continuously reviews and enhances its economic capital model as appropriate. Notably during the course of 2009 the economic capital stress tests for market risk were recalibrated to reflect the extreme market moves observed in the later part of 2008. This included extension of the assumed holding periods on credit positions, and significant increases to the shocks applied to equity indices and credit spreads, especially for securitized products. In addition to the recalibration, there were improvements to the economic capital model. These included the addition of stress tests for leveraged exchange traded funds and for gap risk in non-recourse finance in emerging markets. Within the economic capital framework the Group captures the effects of rating migration as well as profits and losses due to fair value accounting. The Group uses economic capital to show an aggregated view of its risk position from individual business lines up to consolidated Group level. The Group also uses economic capital (as well as goodwill and unamortized other intangible assets) in order to allocate book capital among the businesses. This enables the Group to assess each business unit's risk-adjusted profitability, which is a key metric in managing financial resources. In addition, the Group considers economic capital, in particular for credit risk, when the Group measures the risk-adjusted profitability of its client relationships.

- **Expected loss.** The Group uses expected loss as a measure of the credit and operational risk. Expected loss is a measurement of the loss the Group can expect within a one-year period from these risks as of the respective reporting date, based on historical loss experience. When calculating expected loss for credit risk, the Group takes into account credit risk ratings, collateral, maturities and statistical averaging procedures to reflect the risk characteristics of different types of exposures and facilities. All parameter assumptions are based on statistical averages of up to seven years based on the Group's internal default and loss history as well as external benchmarks. The Group uses expected loss as a tool of the risk management process and as part of the Group's management reporting systems. The Group also considers the applicable results of the expected loss calculations as a component of its collectively assessed allowance for credit losses included in the financial statements. For operational risk the Group determines the expected loss from statistical averages of internal loss history, recent risk trends as well as forward looking expert estimates.

- **Value-at-risk.** The Group uses the value-at-risk approach to derive quantitative measures for trading book market risks under normal market conditions. The Group's value-at-risk figures play a role in both internal and external (regulatory) reporting. For a given portfolio, value-at-risk measures the potential future loss (in terms of market value) that, under normal market conditions, will not be exceeded with a defined confidence level in a defined period. The value-at-risk for a total portfolio represents a measure of diversified market risk (aggregated using pre-determined correlations) in that portfolio.

- **Stress testing.** The Group supplements the analysis of credit, market, operational and liquidity risk with stress testing. For credit risk management purposes, the Group performs stress tests to assess the impact of changes in general economic conditions or specific parameters on credit exposures or parts thereof as well as the impact on the creditworthiness of the Group's portfolio. For market risk management purposes, the Group performs stress tests because value-at-risk calculations are based on relatively recent historical data, only purport to estimate risk up to a defined confidence level and assume good asset liquidity. Therefore, they only reflect possible losses under relatively normal market conditions. Stress tests helps the Group to determine the effects of potentially extreme market developments on the value of market risk sensitive exposures, both on highly liquid and less liquid trading positions as well as investments. The correlations between market risk factors used in the Group's current stress tests are estimated from volatile market conditions in the past using an algorithm, and the estimated correlations proved to be essentially consistent with those observed during recent periods of market stress. The Group uses stress testing to determine the amount of economic capital the Group needs to allocate in order to cover market risk exposure under the scenarios of extreme market conditions the Group selects for simulations. For operational risk management purposes, the Group performs stress tests on its economic capital model to assess its sensitivity to changes in key model components, which include external losses. For liquidity risk management purposes, the Group performs stress tests and scenario analysis to evaluate the impact of sudden stress events on the Group's liquidity position. In 2009, the Group has stepped up its efforts to further align the Group's stress testing framework across the different risk types.

- **Regulatory risk assessment.** The Group's operations throughout the world are regulated and supervised by relevant authorities in each of the jurisdictions in which it conducts business. Such regulation covers licensing, capital adequacy, liquidity, risk concentration, conduct of business and organizational and reporting requirements. Primarily, the Group is subject to comprehensive regulation and supervision by the BaFin and the Deutsche Bundesbank (referred to as "Bundesbank"), the German central bank. The BaFin supervises the operations of German banks to ensure that they are in compliance with the Banking Act and other applicable laws and regulations. The Bundesbank supports the BaFin and closely cooperates with it. The Banking Act and the rules and regulations thereunder implement certain recommendations of the Basel Committee on Banking Supervision, as well as certain European Union directives relating to banks. It addresses issues such as regulatory capital, risk-based capital adequacy and consolidated supervision.

Risk Reporting and Measurement Systems

The Group has centralized risk data warehouses and systems supporting regulatory reporting and external disclosures, as well as internal management reporting for credit, market, operational and liquidity risk. The Group's risk infrastructure incorporates the relevant legal entities and business divisions and provides the basis for tailor-made reporting on risk positions, capital adequacy and limit utilization to the relevant functions on a regular and ad-hoc basis. Established units within Finance and Legal, Risk & Capital assume responsibility for measurement, analysis and reporting of risk while ensuring sufficient quality and integrity of risk-related data.

4.3 Capital Management

The Group's Treasury function manages the Group's capital at group level and locally in each region. The allocation of financial resources, in general, and capital, in particular, favors business portfolios with the highest positive impact on the Group's profitability and shareholder value. As a result, Treasury periodically reallocates capital among business portfolios.

Treasury implements the Group's capital strategy, which itself is developed by the Capital and Risk Committee and approved by the Management Board, including the issuance and repurchase of shares. The Group is committed to maintain its sound capitalization. Overall capital demand and supply are constantly monitored and adjusted, if necessary, to meet the need for capital from various perspectives. These include book equity based on IFRS accounting standards, regulatory capital and economic capital. Since October 2008, the Group's target for the Tier 1 capital ratio continued to be at 10% or above.

The allocation of capital, determination of the Group's funding plan and other resource issues are presented to and approved by the Capital and Risk Committee.

The Group conducts an annual planning process to determine the Group's future strategic direction, decide on key initiatives and allocate resources to the businesses. The Group's plan comprises profit and loss, capital supply and capital demand, other resources, such as headcount, and business-specific key performance indicators. This process is performed at the business division level comprising the next five years, with the first of the five years detailed by quarter (operative plan). Based upon a range of economic scenarios, the business areas discuss their strategic development with the required risk management functions in order to align their revenue potential with the Group's risk appetite/resources. Group Strategy & Planning and Finance coordinate the strategic planning process and present the resulting strategic plan to the Group Executive Committee for discussion and final approval. The final plan is also presented to the Supervisory Board at the beginning of each year.

The approved planned risk-weighted assets and capital deduction items form the basis for quarterly capital demand limits by business area. The risk and performance plans feed into Treasury's capital and liquidity planning. Depending on the development of risk-weighted assets and capital deduction items, Treasury regularly updates contingency measures in light of the Group's Tier 1 ratio target.

Regional capital plans covering the capital needs of the Group's branches and subsidiaries are prepared on a semi-annual basis and presented to the Group Investment Committee. Most of the Group's subsidiaries are subject to legal and regulatory capital requirements. Local Asset and Liability Committees attend to those needs under the stewardship of regional Treasury teams. Furthermore, they safeguard compliance with requirements such as restrictions on dividends allowable for remittance to Deutsche Bank AG or on the ability of the Group's subsidiaries to make loans or advances to the parent bank. In developing, implementing and testing the Group's capital and liquidity, the Group takes such legal and regulatory requirements into account.

The 2008 Annual General Meeting granted to the Group's management the authority to buy back up to 53.1 million shares before October 31, 2009. No shares had been repurchased under this authorization until the Annual General Meeting in May 2009 when a new authorization was granted.

The 2009 Annual General Meeting granted the Group's management the authority to buy back up to 62.1 million shares before the end of October 2010. During the period from the Annual General Meeting in May 2009 until year-end 2009, 11.7 million shares (or 1.9 % of shares issued) were purchased, which were used for equity compensation purposes. The purchases were executed in July and August 2009.

In March 2009, the Group issued 50 million new registered shares to Deutsche Post AG. In turn, Deutsche Post AG contributed-in-kind a minority stake in Deutsche Postbank AG to Deutsche Bank AG.

The Group issued € 1.3 billion of hybrid Tier 1 capital for the year ended December 31, 2009. Total outstanding hybrid Tier 1 capital (all noncumulative trust preferred securities) as of December 31, 2009, amounted to € 10.6 billion compared to € 9.6 billion as of December 31, 2008.

4.4 Balance Sheet Management

The Group manages its balance sheet on a Group level and, where applicable, locally in each region. In the allocation of financial resources the Group favors business portfolios with the highest positive impact on its profitability and shareholder value. During 2009, the Group strengthened balance sheet oversight by the introduction of a new function within Finance with the mandate to monitor and analyze balance sheet developments and to track certain market observed balance sheet ratios. Based on this the Group triggers discussion and management action by the Capital and Risk Committee. While the Group monitors IFRS balance sheet developments, the balance sheet management is principally focused on US GAAP pro-forma values as used in the Group's leverage ratio target definition. In 2009, the Group reduced its leverage ratio, according to its target definition, from 28 as of December 31, 2008 to 23 as of December 31, 2009, well below the Group's leverage ratio target of 25. This improvement in the Group's leverage ratio, according to its target definition, principally reflects lower US GAAP pro-forma assets, as well as higher adjusted equity. The leverage ratio according to the Group's target definition is calculated using adjusted total assets and total equity figures. The Group's leverage ratio, calculated as the ratio of total assets under IFRS to total equity under IFRS, was 40 at the end of 2009 compared to 69 at the end of 2008.

4.5 Economic Capital Requirements

The Group uses economic capital to show an aggregated management view of the risk position from individual business lines up to the consolidated Group level. The Group also uses economic capital (as well as goodwill and other nonamortizing intangibles) in order to allocate the Group's active book equity among its businesses. This enables the Group to assess each business unit's risk-adjusted profitability, which is a key metric in managing the financial resources in order to optimize the value generated for the Group's shareholders. Active book equity is defined as shareholders' equity adjusted by unrealized net gains on assets available for sale, fair value adjustments on cash flow hedges (both components net of applicable taxes) and dividends, for which a proposal is accrued on a quarterly basis and for which payments occur once a year following the approval by the Annual General Meeting. In addition, the Group considers economic capital, in particular for credit risk, when measuring the risk-adjusted profitability of the Group's client relationships.

The table below shows the Group's total economic capital at December 31, 2009 and December 31, 2008, following the IFRS consolidation principles, calculated for credit, market, business and operational risk; it does not include liquidity risk. To determine the Group's overall economic capital, the Group generally considers diversification benefits across risk types except for business risk, which is aggregated by simple addition. The Group estimates the diversification benefit across risk types through application of a simulation model which combines loss distributions for credit, market and operational risk, considering the dependence of their key risk drivers.

Table 5 Economic Capital Requirements

Economic capital usage in € m.	Dec 31, 2009	Dec 31, 2008
Credit risk	7,453	8,986
Market risk ¹	12,515	8,809
Trading market risk	4,613	5,547
Nontrading market risk ¹	7,902	3,262
Operational risk	3,493	4,147
Diversification benefit across credit, market and operational risk	(3,166)	(3,134)
Sub-total credit, market and operational risk¹	20,295	18,808
Business risk ¹	501	498
Total economic capital requirements	20,796	19,306

¹ Deposit bucketing risk is reported under nontrading market risk beginning in 2009. It was reported previously under business risk. The amount for 2008 has been restated.

As of December 31, 2009, the Group's economic capital usage totaled € 20.8 billion, which is € 1.5 billion, or 8 %, above the € 19.3 billion economic capital usage as of December 31, 2008. This increase in economic capital primarily reflected the acquisition of a minority stake in Deutsche Postbank AG, partly off-set by results from the Group's de-risking initiative during the year. The Group's economic capital usage for the nontrading market risk portfolios totaled € 7.9 billion at year-end 2009, which is € 4.6 billion, or 142 %, above the economic capital usage at year-end 2008. This increase was mainly driven by the Group's strategic investments in Deutsche Postbank AG and, to a lesser extent, Hua Xia Bank Company Limited.

For further detail on the Group's economic capital requirements and the effect of refinements to the Group's economic capital calculations please refer to the chapter Risk Report, "Overall Risk Position" in the Group's Financial Report 2009.

5. Counterparty Credit Risk: Strategy and Processes

5.1 Credit Risk Management Principles and Strategy

The Group manages credit risk in a coordinated manner at all relevant levels within the organization. The following principles underpin the Group's approach to credit risk management:

- In all group divisions consistent standards are applied in the respective credit decision processes.
- The approval of credit limits for counterparties and the management of the Group's individual credit exposures must fit within the Group's portfolio guidelines and credit strategies.
- Every extension of credit or material change to a credit facility (such as its tenor, collateral structure or major covenants) to any counterparty requires credit approval at the appropriate authority level.
- The Group assigns credit approval authorities to individuals according to their qualifications, experience and training, and the Group reviews these periodically.
- The Group measures and consolidates all credit exposures to each obligor on a global consolidated basis that applies across the consolidated Group. The Group defines an "obligor" as a group of individual borrowers that are linked to one another by any of a number of criteria the Group has established, including capital ownership, voting rights, demonstrable control, other indication of group affiliation; or are jointly and severally liable for all or significant portions of the credit extended by the Group.

A portfolio management function within credit risk management oversees and monitors the divisional portfolios and defines maximum risk appetite guidelines on specific portfolio levels to ensure a diversified portfolio.

5.2 Credit Risk Ratings and Governance

Credit Risk Ratings

Basic and key element of the credit approval process is a detailed risk assessment of every credit exposure associated with a counterparty. The Group's risk assessment procedures consider both the creditworthiness of the counterparty and the risks related to the specific type of credit facility or exposure. This risk assessment not only affects the structuring of the transaction and the outcome of the credit decision, but also influences the level of decision-making authority required to extend or materially change the credit and the monitoring procedures the Group applies to the ongoing exposure.

The Group has its own in-house assessment methodologies, scorecards and rating scale for evaluating the creditworthiness of its counterparties. The Group's granular 26-grade rating scale, which is calibrated on a probability of default measure based upon a statistical analysis of historical defaults in the Group's portfolio, enables the Group to compare its internal ratings with common market practice and ensures comparability between different sub-portfolios of the Group. Several default ratings therein enable the Group to incorporate the potential recovery rate of defaulted exposure.

The Group generally rates all its credit exposures individually, though certain portfolios of securitized receivables are rated on a pool level. When the Group assigns its internal risk ratings, the Group compares them with external risk ratings assigned to the Group's counterparties by the major international rating agencies, where possible.

Governance

All rating methodologies have to be approved by the Group Credit Policy Committee ("GCPC"), a sub-committee of the Risk Executive Committee, before the methodologies are used for credit decisions and capital calculation for the first time or before they are significantly changed. Regulatory approval might be required in addition. The results of the regular validation processes as stipulated by internal policies have to be brought to the attention of the GCPC, even if the validation results do not lead to a change.

5.3 Credit Risk Mitigation

Various risk mitigation techniques are proactively employed in order to reduce the risk in the Group's credit portfolio.

Risk mitigants are predominantly considered in three broad categories:

- **Risk transfers**, which shift the probability of default risk of an obligor to a third party,
- **Collateral**, which improves the recovery of obligations and
- **Netting**, which reduces the credit risk exposure from derivatives and repo- and repo-style transactions.

Risk transfers to third parties form a key part of the Group's overall risk management process and are executed in various forms, including outright sales, single name and portfolio hedging, and securitizations. They are conducted by the respective business units and by the Group's Loan Exposure Management Group ("LEMG"), in accordance with specifically approved mandates.

LEMG focuses on managing the credit risk of loans and lending-related commitments of the international investment-grade portfolio and the medium-sized German companies' portfolio within the Group's Corporate and Investment Bank Group Division.

LEMG is concentrating on two primary initiatives within the credit risk framework to further enhance risk management discipline, improve returns and use capital more efficiently:

- to reduce single-name and industry credit risk concentrations within the credit portfolio and
- to manage credit exposures actively by utilizing techniques including loan sales, securitization via collateralized loan obligations, default insurance coverage and single-name and portfolio credit default swaps.

Collateral is used in various forms in order to mitigate the inherent risk in DB's credit portfolio by reducing the loss severity of individual transactions.

The Group aims to secure its credit portfolios via collateral agreements. Divisional risk units review and approve terms and conditions of related documentation and monitor transactions on an ongoing basis in close interaction with front and middle office.

All types of collateral are subject to frequent valuation and regular review. The frequency depends on the collateral type, associated risks and legal environment.

In addition or as a substitute to risk transfers or use of collateral, various other credit risk mitigation techniques are employed in order to reduce the risk in the Group's credit portfolio, in particular for illiquid assets, such as structural transaction mitigants to improve recoveries in the event of a default.

While all the above mentioned risk mitigants can be an alternative source of repayment, they do not compensate for high quality underwriting standards.

Concentrations within Credit Risk Mitigation

Concentrations within credit risk mitigations taken may occur if a number of guarantors and credit derivative providers with similar economic characteristics are engaged in comparable activities with changes in economic or industry conditions affecting their ability to meet contractual obligations.

The Group uses a comprehensive range of quantitative tools and metrics to monitor its credit risk mitigating activities. Limits are established across all product categories including guarantees and credit derivative exposures used as risk mitigation. Limits exist at an individual guarantor or credit derivative provider level as part of the general credit risk management process and are also monitored on a portfolio basis with regard to industries, countries and other factors.

Guarantees and credit derivative contracts are primarily entered into with banks and insurance companies (including exposures to monoline insurers which are discussed in more detail in the chapter Management Report, "Exposure to Monoline Insurers" in the Group's Financial Report 2009), principally in Western Europe and the United States. The majority of these exposures carry a rating within the investment grade band.

For the purpose of mitigating credit risk in its lending portfolios the Group also makes use of financial and other physical collateral. Reflecting the Group's security financing activity, a significant portion of collateral taken relates to fixed income and equity securities. Further collateral is taken in form of cash and deposits as well as real estate. The real estate collateral principally consists of residential properties in Germany.

5.4 Credit Risk Limit Setting and Monitoring

Credit Limits

Credit limits set forth the maximum credit exposures the Group is willing to assume over specified periods. They relate to products, conditions of the exposure and other factors. Credit limits are established by the Credit Risk Management function via the execution of assigned credit authorities. Credit authority reflects the mandate to approve new credit limits as well as increases or the extension of existing credit limits. Credit authority is generally assigned to individuals as personal credit authority according to the individual's professional qualification and experience.

Where an individual's personal authority is insufficient to establish required credit limits, the transaction is referred to a higher credit authority holder or where necessary to an appropriate credit committee such as the CRM Underwriting Committee. Where personal and committee authorities are insufficient to establish appropriate limits the case is referred to the Management Board for approval.

All assigned credit authorities are reviewed on a periodic basis to ensure that they are adequate. The results of the review are presented to the Group Credit Policy Committee and reported to the Risk Executive Committee.

Segregation of Credit Exposures

Counterparty credit exposure arises from the Group's traditional nontrading lending activities which includes elements such as loans and contingent liabilities. Counterparty credit exposure also arises via the Group's direct trading activity with clients in certain instruments which include OTC derivatives, FX forwards and Forward Rate Agreements.

A default risk also arises from the Group's positions in traded credit products such as bonds. This risk is managed using both credit & market risk parameters.

Monitoring Default Risk

Ongoing active monitoring and management of the Group's credit risk positions is an integral part of credit risk management. Monitoring tasks are primarily performed by the divisional risk units in close cooperation with the Group's portfolio management function. The Group monitors all of its credit exposures on a continuing basis using the risk management tools described above.

Credit counterparties are allocated to credit officers within specified divisional risk units which are aligned to respective business divisions such as Global Banking, Global Markets or Global Transaction Banking. The individual credit officers within these divisional risk units have the most relevant expertise and experience to manage the credit risks associated with these counterparties and their associated credit related transactions. It is the responsibility of each credit officer to undertake ongoing credit monitoring for their allocated portfolio of counterparties. Monitoring of Credit risk arising from the Group's trading activities with credit counterparties is undertaken in accordance with industry best practice by reference to various dedicated measures that quantify the expected current and future exposure levels, including the exposure levels under adverse market developments. The credit process for trading instruments requires limits to be established against trading instrument exposures which are monitored by respective credit officers as part of their ongoing counterparty monitoring activities.

The Group also has procedures in place intended to identify at an early stage credit exposures for which there may be an increased risk of loss. In instances where the Group has identified counterparties where problems might arise, the respective exposure is generally placed on a watchlist. The Group aims to identify counterparties that, on the basis of the application of the Group's risk management tools, demonstrate the likelihood of problems well in advance in order to effectively manage the credit exposure and maximize recovery. The objective of this early warning system is to address potential problems while adequate alternatives for action are still available. This early risk detection is a tenet of the Group's credit culture and is intended to ensure that greater attention is paid to such exposures.

Monitoring Traded Default Risk

Traded credit products such as bonds in the Group's developed markets' trading book are managed by a dedicated risk management unit combining credit and market risk expertise. The Group uses appropriate portfolio limits and ratings-driven thresholds on single-issuer basis, combined with market risk management tools to risk manage such positions. Emerging markets traded credit products are risk managed using expertise which resides within the Group's respective emerging markets credit risk unit and market risk management.

Economic Capital for Credit Risk

The Group calculates economic capital for default risk, transfer risk and settlement risk as elements of credit risk. In line with the Group's economic capital framework, economic capital for credit risk is set at a level to absorb with a probability of 99.98 % very severe aggregate unexpected losses within one year.

The Group's economic capital for credit risk is derived from the loss distribution of a portfolio via Monte Carlo simulation of correlated rating migrations. The loss distribution is modeled in two steps. First, individual credit exposures are specified based on parameters for the probability of default, exposure at default and loss given default. In a second step, the probability of joint defaults is modeled through the introduction of economic factors, which correspond to geographic regions and industries. The simulation of portfolio losses is then performed by an internally developed model, which takes rating migration and maturity effects into account. The Group allocates expected losses and economic capital derived from this loss distribution down to transaction level to enable management on transaction, customer and business level.

5.5 Credit Exposure

The Group defines its credit exposure as all transactions where losses might occur due to the fact that counterparties may not fulfill their contractual payment obligations. The Group calculates the gross amount of the exposure without taking into account any collateral, other credit enhancement or credit risk mitigating transactions. In the tables below, the Group shows details about several of its main credit exposure categories, namely loans, irrevocable lending commitments, contingent liabilities, over-the-counter (“OTC”) derivatives, tradable assets and repo style transactions following the IFRS-principles for consolidation.

- **Loans** are net loans as reported on the Group’s balance sheet at amortized cost but before deduction of the Group’s allowance for loan losses.
- **Irrevocable lending commitments** consist of the undrawn portion of irrevocable lending-related commitments.
- **Contingent liabilities** consist of financial and performance guarantees, standby letters of credit and indemnity agreements.
- **OTC derivatives** are the credit exposures from over-the-counter derivative transactions that the Group has entered into, after netting and cash collateral received.
- **Tradable assets** consist of bonds, traded loans and other fixed-income products that are recorded either in trading assets or securities available for sale for accounting purposes. From a regulatory perspective this category principally covers trading book positions.
- **Repo- and repo-style transactions** consist of repurchase transactions, as well as securities or commodities lending and borrowing transactions after application of netting as allowed for IFRS accounting purposes.

Although considered in the monitoring of credit exposures, the following are not included in the tables below: brokerage and securities related receivables, interest-earning deposits with banks, cash and due from banks, and accrued interest receivables. Excluded as well are true sale securitization positions and equity investments, which are dealt with specifically in chapters 7 “Securitization” and 9.1 “Equity Investments in the Banking Book”, respectively.

The following tables break down the main credit exposure categories by geographical region. For these tables, the allocation of exposures to regions is based on the country of domicile of the counterparties, regardless of any affiliations the counterparties may have with corporate groups domiciled elsewhere.

Table 6 Credit Risk Exposure by Region

Credit risk exposure by region							Dec 31, 2009
in € m.	Loans ¹	Irrevocable lending commitments	Contingent liabilities	OTC derivatives ²	Tradable assets	Repo- and repo-style transactions	Total
Eastern Europe	6,986	1,306	1,428	690	3,486	932	14,828
Western Europe	187,251	41,118	25,254	24,536	60,164	64,087	402,410
Africa	947	233	620	458	1,074	1,091	4,423
Asia/Pacific	16,921	5,793	7,086	7,060	31,778	25,385	94,023
North America	45,717	55,337	17,018	30,805	83,023	66,757	298,657
Central and South America	3,325	214	777	831	3,916	2,042	11,105
Other ³	301	124	–	160	169	–	754
Total credit risk exposure	261,448	104,125	52,183	64,540	183,610	160,294	826,200

1 Includes impaired loans amounting to € 7.2 billion as of December 31, 2009.

2 Includes the effect of netting agreements and cash collateral received where applicable.

3 Includes supranational organizations and other exposures that the Group have not allocated to a single region.

Credit risk exposure by region							Dec 31, 2008
in € m.	Loans ¹	Irrevocable lending commitments	Contingent liabilities	OTC derivatives ²	Tradable assets	Repo- and repo-style transactions	Total
Eastern Europe	7,672	1,654	2,086	2,033	5,001	2,849	21,295
Western Europe	185,577	38,698	25,289	48,677	70,362	58,547	427,150
Africa	1,076	333	566	297	861	1,432	4,565
Asia/Pacific	16,887	6,156	6,223	13,225	31,176	16,750	90,417
North America	56,129	56,812	13,943	57,177	98,241	86,898	369,200
Central and South America	3,530	196	660	1,552	4,030	1,617	11,585
Other ³	348	228	48	629	546	–	1,799
Total credit risk exposure	271,219	104,077	48,815	123,590	210,217	168,093	926,011

1 Includes impaired loans amounting to € 3.7 billion as of December 31, 2008.

2 Includes the effect of master agreement netting and cash collateral received where applicable.

3 Includes supranational organizations and other exposures that the Group has not allocated to a single region.

The following tables break down the main credit exposure categories according to the industry sectors of the Group's counterparties.

Table 7 Credit Risk Exposure by Industry

Credit risk exposure by industry							Dec 31, 2009
in € m.	Loans ¹	Irrevocable lending commitments	Contingent liabilities	OTC derivatives ²	Tradable assets	Repo- and repo-style transactions	Total
Banks and insurances	22,002	25,289	11,315	27,948	69,054	151,320	306,928
Manufacturing	17,314	24,814	16,809	2,169	8,207	362	69,675
Households	85,675	4,278	1,820	801	1,807	–	94,381
Public sector	9,572	520	19	5,527	57,967	755	74,360
Wholesale and retail trade	10,938	6,027	3,443	604	2,705	–	23,717
Commercial real estate activities	28,959	1,876	2,194	1,286	4,664	79	39,058
Fund management activities	26,462	11,135	540	12,922	9,181	41	60,281
Other ³	60,526	30,186	16,043	13,283	30,025	7,737	157,800
Total credit risk exposure	261,448	104,125	52,183	64,540	183,610	160,294	826,200

1 Includes impaired loans amounting to € 7.2 billion as of December 31, 2009.

2 Includes the effect of netting agreements and cash collateral received where applicable.

3 Loan exposures for "Other" include lease financing.

Credit risk exposure by industry							Dec 31, 2008
in € m.	Loans ¹	Irrevocable lending commitments	Contingent liabilities	OTC derivatives ²	Tradable assets	Repo- and repo-style transactions	Total
Banks and insurances	26,998	24,970	11,568	68,641	84,267	157,025	373,469
Manufacturing	19,043	24,889	13,669	4,550	12,018	489	74,658
Households	83,376	3,862	1,768	791	5,623	29	95,449
Public sector	9,972	819	628	7,125	52,362	668	71,574
Wholesale and retail trade	11,761	6,377	3,423	1,264	4,059	–	26,884
Commercial real estate activities	27,083	2,239	2,403	3,213	5,514	76	40,528
Other ³	92,986	40,921	15,356	38,006	46,374	9,806	243,449
Total credit risk exposure	271,219	104,077	48,815	123,590	210,217	168,093	926,011

1 Includes impaired loans amounting to € 3.7 billion as of December 31, 2008.

2 Includes the effect of master agreement netting and cash collateral received where applicable.

3 Included in the category "Other" is investment counseling and administration exposure of € 77.2 billion as of December 31, 2008 (reflected as fund management activities in 2009).

The tables below provide the residual contract maturity profile of the main credit exposure categories.

Table 8 Credit Risk Exposure by Maturity

Credit risk exposure by maturity							Dec 31, 2009
	Loans	Irrevocable lending commitments	Contingent liabilities	OTC derivatives	Tradable assets	Repo- and repo-style transactions	Total
in € m.							
< 1 year	95,388	36,843	29,103	14,798	32,662	155,638	364,432
1 year – 5 years	63,352	57,323	13,844	19,703	56,959	4,528	215,709
> 5 years	102,708	9,959	9,236	30,039	93,989	128	246,059
Total credit risk exposure	261,448	104,125	52,183	64,540	183,610	160,294	826,200

Credit risk exposure by maturity							Dec 31, 2008
	Loans	Irrevocable lending commitments	Contingent liabilities	OTC derivatives	Tradable assets	Repo- and repo-style transactions	Total
in € m.							
< 1 year	104,643	39,876	27,202	38,601	41,229	163,894	415,445
1 year – 5 years	60,090	53,354	12,533	32,967	60,187	4,158	223,289
> 5 years	106,486	10,847	9,080	52,022	108,801	41	287,277
Total credit risk exposure	271,219	104,077	48,815	123,590	210,217	168,093	926,011

The average credit risk exposure held over the four quarters was € 858 billion for 2009 and € 1,137 billion for 2008 as shown in the tables below.

Table 9 Average Credit Risk Exposure

Average credit risk exposure							2009
	Loans	Irrevocable lending commitments	Contingent liabilities	OTC derivatives	Tradable assets	Repo- and repo-style transactions	Total
in € m.							
Total average credit risk exposure	266,986	104,942	50,563	84,131	186,747	164,752	858,121
Total credit risk exposure at year-end	261,448	104,125	52,183	64,540	183,610	160,294	826,200

Average credit risk exposure							2008
	Loans	Irrevocable lending commitments	Contingent liabilities	OTC derivatives	Tradable assets	Repo- and repo-style transactions	Total
in € m.							
Total average credit risk exposure	238,023	113,002	49,268	102,000	358,355	276,000	1,136,648
Total credit risk exposure at year-end	271,219	104,077	48,815	123,590	210,217	168,093	926,011

The year-end balance for loans as of December 31, 2009 shown above included € 33.6 billion with regard to assets reclassified into loans due to the application of the amendments of IAS 39, of which € 24.3 billion were reclassified out of tradable assets and € 9.3 billion were reclassified out of financial assets available for sale. For more details see Note [12] “Amendments to IAS 39 and IFRS 7, ‘Reclassification of Financial Assets’” in the Group’s Financial Report 2009.

The lower total credit risk exposure as of December 31, 2009 was most visible for OTC derivatives. It reflected mainly market movements (i.e. interest rate and tightening credit spreads) as well as the Group's de-leveraging activities.

The year-end balance for loans as of December 31, 2008 shown above included € 34.4 billion with regard to assets reclassified into loans due to the application of the amendments of IAS 39, of which € 23.6 billion were reclassified out of tradable assets and € 10.8 billion were reclassified out of financial assets available for sale. For more details see Note [12] "Amendments to IAS 39 and IFRS 7, 'Reclassification of Financial Assets' " in the Group's Financial Report 2008.

The lower total credit risk exposure at December 31, 2008 reflected the Group's de-leveraging activities, in particular with regard to tradable assets and repo- and repo-style transactions.

5.6 Counterparty Credit Risk from Derivatives

Credit Exposure from Derivatives

Exchange-traded derivative transactions (e.g., futures and options) are regularly settled through a central counterparty (e.g., LCH.Clearnet Ltd. or Eurex Clearing AG), the rules and regulations of which provide for daily margining of all current and future credit risk positions emerging out of such transactions. To the extent possible, the Group also uses central counterparty clearing services for OTC derivative transactions ("OTC clearing"); the Group thereby benefits from the credit risk mitigation achieved through the central counterparty's settlement system.

In order to reduce the credit risk resulting from OTC derivative transactions, where OTC clearing is not available, the Group regularly seeks the execution of standard master agreements (such as the International Swaps and Derivatives Association's master agreements for derivatives or the German Master Agreement for Financial Derivative Transactions) with the Group's clients. A master agreement allows the netting of rights and obligations arising under derivative transactions that have been entered into under such master agreement upon the counterparty's default, resulting in a single net claim owed by or to the counterparty ("close-out netting"). For parts of the derivatives business (e.g., foreign exchange transactions) the Group also enters into master agreements under which the Group sets off amounts payable on the same day in the same currency and in respect to transactions covered by such master agreements ("payment netting"), reducing the Group's settlement risk.

In its risk measurement and risk assessment processes the Group applies netting only to the extent it has satisfied itself of the legal validity and enforceability of the master agreement in all relevant jurisdictions.

Also, the Group enters into collateral support annexes (“CSA”) to master agreements in order to further reduce the Group’s derivatives-related credit risk. These collateral support annexes generally provide risk mitigation through periodic (usually daily) margining of the covered exposure. The CSA also provides for the right to terminate the related derivative transactions upon the counterparty’s failure to honor a margin call. As with netting, when the Group believes the collateral support annex is enforceable, the Group reflects this in its exposure measurement.

As the replacement values of derivatives portfolios fluctuate with movements in market rates and with changes in the transactions in the portfolios, the Group also estimates the potential future replacement costs of the portfolios over their lifetimes or, in case of collateralized portfolios, over appropriate unwind periods. The Group measures the potential future exposure against separate limits. The Group supplements the potential future exposure analysis with stress tests to estimate the immediate impact of extreme market events on the Group’s exposures (such as event risk in the Group’s Emerging Markets portfolio).

The potential future exposure measure, which the Group uses, is generally given by a time profile of simulated positive market values of each counterparty’s derivatives portfolio, for which netting and collateralization are considered. For limit monitoring the Group employs the 95th quantile of the resulting distribution of market values, internally referred to as potential future exposure (“PFE”). The average exposure profiles generated by the same calculation process are used to derive the so-called average expected exposure (“AEE”) measure which the Group uses to reflect potential future replacement costs within the Group’s credit risk economic capital and the expected positive exposure (“EPE”) measure driving the Group’s regulatory capital requirements. While AEE and EPE are generally calculated with respect to a time horizon of one year, the PFE is measured over the entire lifetime of a transaction or netting set. The Group also employs the aforementioned calculation process to derive stressed exposure results for input into its credit portfolio stress testing.

Certain collateral support annexes to master agreements provide for rating dependent triggers, where additional collateral must be pledged if a party’s rating is downgraded. The Group also enters into master agreements that provide for an additional termination event upon a party’s rating downgrade. The Group analyzes and monitors potential contingent payment obligations resulting from a rating downgrade in the Group’s stress testing approach for liquidity risk on an ongoing basis.

Credit Valuation Adjustment

The Group establishes a counterparty credit valuation adjustment for OTC derivative transactions to cover expected credit losses. The adjustment amount is determined at each reporting date by assessing the potential credit exposure to all counterparties, taking into account any collateral held, the effect of netting under a master agreement, expected loss given default and the credit risk for each counterparty based on historic default levels.

The credit valuation adjustments are significant for certain monoline counterparties. These credit valuation adjustments are assessed using a model-based approach with numerous input factors for each counterparty, including the likelihood of an event (either a restructuring or insolvency), an assessment of any potential settlement in the event of a restructuring, and recovery rates in the event of either restructuring or insolvency. The Group recorded € 1.2 billion credit valuation adjustments against its aggregate monoline exposures for 2009 and € 2.2 billion for 2008).

Treatment of Default Situations under Derivatives

Unlike in the case of the standard loan assets, the Group generally has more options to manage the credit risk in its OTC derivatives when movement in the current replacement costs of the transactions and the behavior of the Group's counterparty indicate that there is the risk that upcoming payment obligations under the transactions might not be honored. In these situations, the Group is frequently able under prevailing contracts to obtain additional collateral or terminate the transactions or the related master agreement.

The master agreements executed with the Group's clients usually provide for a broad set of standard or bespoke termination rights which allow the Group to respond swiftly to a counterparty's default or to other circumstances which indicate a high probability of failure. When the Group's decision to terminate derivative transactions or the related master agreement results in a residual net obligation owed by the counterparty, the Group restructures the obligation into a non-derivative claim and manages it through a regular work-out process. As a consequence, for accounting purposes the Group typically does not show any nonperforming derivatives.

Wrong way risk occurs when exposure to a counterparty is adversely correlated with the credit quality of that counterparty. It must be carefully considered together with the correlation between the obligor and risk mitigants and is actively monitored and reviewed on a regular basis. In compliance with Section 224 (8) and (9) SolvV the Group has established a monthly wrong way risk monitoring process, whereby transactions subject to wrong way risk are automatically selected and presented for comment to the responsible credit officer. In addition, the Group utilizes its newly established process for calibrating its own alpha parameter (as defined in Section 223 (7) SolvV) to estimate the overall wrong-way risk in the Group's derivatives and securities financing transaction portfolio.

The following tables show the positive market values or replacement costs of the Group's OTC and exchange-traded derivative transactions entered into for trading and non-trading purposes as of December 31, 2009 and December 31, 2008, following IFRS consolidation and valuation principles. The positive market values are presented gross, that is, before considering close-out netting and collateral. The benefit resulting from the application of netting and collateral is displayed separately.

Table 10 Positive Market Values of Derivatives

Positive market values of derivatives ¹	Dec 31, 2009			
	Positive market values before netting and collateral agreements	Netting agreements	Eligible collateral ²	Positive market values after netting and collateral agreements
in € m.				
Interest rate contracts	345,753	292,157	32,886	20,710
Foreign exchange contracts	87,314	68,276	7,383	11,654
Equity contracts	38,162	27,246	3,250	7,666
Credit derivative contracts	104,384	80,840	7,411	16,134
Commodity-related activities	16,317	11,206	638	4,473
Other contracts	4,480	3,634	62	784
Total positive market values of derivatives	596,410	483,360	51,630	61,420

1 Excludes € 6.8 billion positive market values before netting and collateral or € 166 million positive market values after netting and collateral with regard to derivatives classified as other assets.

2 Includes € 43.7 billion cash collateral.

Positive market values of derivatives ¹	Dec 31, 2008			
	Positive market values before netting and collateral agreements	Netting agreements	Eligible collateral ²	Positive market values after netting and collateral agreements
in € m.				
Interest rate contracts	644,173	565,725	43,687	34,761
Foreign exchange contracts	181,205	134,872	16,428	29,905
Equity contracts	68,784	53,717	5,822	9,245
Credit derivative contracts	295,383	246,401	19,312	29,670
Commodity-related activities	30,410	19,576	1,227	9,607
Other contracts	4,537	3,520	187	830
Total positive market values of derivatives	1,224,492	1,023,811	86,663	114,018

1 Excludes € 10 billion positive market values before netting and collateral or € 401 million positive market values after netting and collateral with regard to derivatives classified as other assets.

2 Includes € 71.5 billion cash collateral.

The counterparty credit risk position resulting from derivative transactions in the form of the regulatory exposure value (exposure at default) amounted to € 129 billion as of December 31, 2009 and to € 246 billion as of December 31, 2008. The related RWA for these derivative counterparty credit risk position amounted to € 51 billion as of December 31, 2009 and to € 82 billion as of December 31, 2008. The calculation builds on the regulatory principles for consolidation and netting and is therefore not directly comparable to the IFRS-related information as presented in the tables above. Moreover, the Group uses the so-called internal model method (“IMM”) to derive a regulatory exposure value for its derivative exposure while applying the regulatory defined alpha multiplier in its calculation. Following regulatory approval to use an own alpha calibration, this parameter changed in 2009 to the minimum setting of 1.2. More details on the internal model method are presented in Section 6.1 “Advanced Internal Ratings Based Approach”.

The tables below list the nominal volumes of the Group's credit derivative exposure as of December 31, 2009 and December 31, 2008, based on the IFRS consolidation principles. The figures are provided on a gross level, meaning no netting has been considered. The tables split the exposure into the part held in the regulatory banking book, which is shown under the heading "used for the own credit portfolio" and the part held in the regulatory trading book, referred to as "acting as intermediary".

Table 11 Notional Amount of Credit Derivatives

Notional amount of credit derivatives	Used for own credit portfolio			Acting as intermediary		Dec 31, 2009
	Protection bought		Protection sold			Total
	in € m.					
Credit default swaps – single name	32,834	385		1,901,230		1,934,450
Credit default swaps – multi name ¹	2,717	3		1,485,334		1,488,055
Total return swaps	8	72		6,852		6,931
Total notional amount of credit derivatives	35,560	461		3,393,416		3,429,436

¹ Includes credit default swaps on indices and nth-to-default credit default swaps.

Notional amount of credit derivatives	Used for own credit portfolio			Acting as intermediary		Dec 31, 2008
	Protection bought		Protection sold			Total
	in € m.					
Credit default swaps – single name	40,012	3,224		2,136,541		2,179,777
Credit default swaps – multi name	–	–		2,253,331		2,253,331
Total return swaps	–	43		16,282		16,325
Total notional amount of credit derivatives	40,012	3,267		4,406,154		4,449,433

5.7 Asset Quality

Information presented in this chapter is based upon IFRS principles of consolidation and uses financial statement values.

As described above, the Group assesses the customers' ability to fulfill their obligations on an ongoing basis by using a variety of risk management tools. This includes the Group's continuous monitoring of the population of impaired and past due loans.

Past Due Loans

The Group considers loans to be past due once contractually agreed payments on principal and/or interest remain unpaid by the borrower. Generally the Group distinguishes between loans that are less than 90 days past due and loans being more than 90 days past due.

Impairment of Loans and Allowance for Loan Losses

At each balance sheet date, the Group assesses whether there is objective evidence that a loan or a group of loans is impaired. A loan or a group of loans is impaired and impairment losses are incurred if:

- there is objective evidence of impairment as a result of a loss event that occurred after the initial recognition of the loan and up to the balance sheet date (a “loss event”),
- the loss event had an impact on the estimated future cash flows of the loan or the group of loans, and
- a reliable estimate of the loss amount can be made.

The Group first assesses whether objective evidence of impairment exists individually for loans that are individually significant. It then assesses impairment collectively for loans that are not individually significant and loans which are significant but for which there is no objective evidence of impairment under the individual assessment.

To allow management to determine whether a loss event has occurred on an individual basis, all significant counterparty relationships are reviewed periodically. This evaluation considers current information and events related to the counterparty, such as the counterparty experiencing significant financial difficulty or a breach of contract, for example, default or delinquency in interest or principal payments.

If there is evidence of impairment leading to an impairment loss for an individual counterparty relationship, then the amount of the loss is determined as the difference between the carrying amount of the loan(s), including accrued interest, and the present value of expected future cash flows discounted at the loan’s original effective interest rate or the effective interest rate established upon reclassification to loans, including cash flows that may result from foreclosure less costs for obtaining and selling the collateral. The carrying amount of the loans is reduced by the use of an allowance account and the amount of the loss is recognized in the income statement as a component of the provision for credit losses.

The collective assessment of impairment is principally to establish an allowance amount relating to loans that are either individually significant but for which there is no objective evidence of impairment, or are not individually significant but for which there is, on a portfolio basis, a loss amount that is probable of having occurred and is reasonably estimable. The loss amount has three components. The first component is an amount for transfer and currency convertibility risks for loan exposures in countries where there are serious doubts about the ability of counterparties to comply with the repayment terms due to the economic or political situation prevailing in the respective country of domicile. This amount is calculated using ratings for country risk and transfer risk which are established and regularly reviewed for each country in which the Group does business. The second component is an allowance amount representing the incurred losses on the portfolio of smaller-balance homogeneous loans, which are loans to individuals and small business customers of the private and retail business. The loans are grouped according to similar credit risk characteristics and the allowance for each group is determined using statistical models based on historical experience. The third component represents an estimate of incurred losses inherent in the group of loans that have not yet been individually identified or measured as part of the smaller-balance homogeneous loans. Loans that were found not to be impaired when evaluated on an individual basis are included in the scope of this component of the allowance.

Once a loan is identified as impaired, although the accrual of interest in accordance with the contractual terms of the loan is discontinued, the accretion of the net present value of the written down amount of the loan due to the passage of time is recognized as interest income based on the original effective interest rate of the loan.

At each balance sheet date, all impaired loans are reviewed for changes to the present value of expected future cash flows discounted at the loan's original effective interest rate. Any change to the previously recognized impairment loss is recognized as a change to the allowance account and recorded in the income statement as a component of the provision for credit losses.

When it is considered that there is no realistic prospect of recovery and all collateral has been realized or transferred to the Group, the loan and any associated allowance is written off. Subsequent recoveries, if any, are credited to the allowance account and recorded in the income statement as a component of the provision for credit losses.

The process to determine the provision for off-balance sheet positions is similar to the methodology used for loans. Any loss amounts are recognized as an allowance in the balance sheet within other liabilities and charged to the income statement as a component of the provision for credit losses.

If in a subsequent period the amount of a previously recognized impairment loss decreases and the decrease can be related due to an event occurring after the impairment was recognized, the impairment loss is reversed by reducing the allowance account accordingly. Such reversal is recognized in profit or loss.

Quantitative Information on Asset Quality

The following quantitative information on asset quality refers to the IFRS scope of consolidation. As of December 31, 2009, the Group's impaired loans totaled € 7.2 billion and were comprised of individually assessed impaired loans amounting to € 4.9 billion and collectively assessed impaired loans amounting to € 2.3 billion. 75 % of the Group's impaired loans were with counterparties domiciled in Western Europe, predominantly with clients domiciled in Germany, while industry concentrations were with households (23 %) and other (35 %), the latter being particularly driven by the impaired junior debt portion of one Leveraged Finance exposure which was reclassified in accordance with IAS 39.

As of December 31, 2009, the Group's loans past due but not impaired totaled € 8.6 billion, of which 72 % were less than 30 days past due. Of the loans past due but not impaired 88 % were with counterparties domiciled in Western Europe, predominantly with clients domiciled in Germany, while industry concentrations were with households (49 %), fund management activities (17 %) and commercial real estate activities (16 %).

The Group's allowance for loan losses for impaired loans as of December 31, 2009 was € 2.9 billion, and included an individually assessed loan loss allowance for impaired loans of € 2.0 billion and a collectively assessed loan loss allowance for impaired loans of € 900 million. More than 80 % of the Group's allowance for loan losses was with counterparties domiciled in Western Europe, predominantly with clients domiciled in Germany, while industry concentrations were with households (25 %), manufacturing (12 %) and "Other" (33 %). The industry sector "Other" reflected primarily the impaired junior debt portion of one Leveraged Finance exposure which was reclassified in accordance with IAS 39.

The following tables present the Group's impaired loans, the individually and collectively assessed loan loss allowances held in respect of these loans and other loans past due but not impaired, broken down by geographic region based on the country of domicile of the counterparties, as well as by industry sectors of the counterparties.

Table 12 Loans Impaired or Past Due by Region

Loans impaired or past due by region				Dec 31, 2009
	Total impaired loans	Individually assessed loan loss allowance	Collectively assessed loan loss allowance	Other loans past due ¹
in € m.				
Eastern Europe	151	17	80	177
Western Europe	5,367	1,533	820	7,581
Africa	27	7	–	2
Asia/Pacific	157	51	–	51
North America	1,395	397	–	800
Central and South America	85	21	–	5
Other	19	3	–	–
Total loans impaired or past due	7,201	2,029	900	8,616

¹ These are loans in which contractual interest or principal payments are one day or more past due and which are not impaired.

Loans impaired or past due by region				Dec 31, 2008
	Total impaired loans	Individually assessed loan loss allowance	Collectively assessed loan loss allowance	Other loans past due ¹
in € m.				
Eastern Europe	54	3	31	199
Western Europe	2,777	805	485	9,016
Africa	–	–	–	5
Asia/Pacific	72	41	–	92
North America	544	50	1	1,659
Central and South America	234	78	–	20
Other	1	–	–	8
Total loans impaired or past due	3,682	977	517	10,999

¹ These are loans in which contractual interest or principal payments are one day or more past due and which are not impaired.

Table 13 Loans Impaired or Past Due by Industry

Loans impaired or past due by industry sector	Dec 31, 2009			
	Total impaired loans	Individually assessed loan loss allowance	Collectively assessed loan loss allowance	Other loans past due ¹
in € m.				
Banks and insurances	101	82	3	18
Manufacturing	698	307	48	301
Households	1,659	49	674	4,183
Public sector	45	6	–	2
Wholesale and retail trade	346	117	48	223
Commercial real estate activities	960	314	22	1,360
Fund management activities	848	281	1	1,506
Other ²	2,544	873	104	1,023
Total loans impaired or past due	7,201	2,029	900	8,616

1 These are loans in which contractual interest or principal payments are one day or more past due and which are not impaired.

2 Information in the industry sector "Fund management activities" has been previously disclosed under category "Other". For December 31, 2009 impaired loans and individually assessed allowances in category "Other" contain primarily the impaired junior debt portion of one Leveraged Finance exposure which was reclassified in accordance with IAS 39.

Loans impaired or past due by industry sector	Dec 31, 2008			
	Total impaired loans	Individually assessed loan loss allowance	Collectively assessed loan loss allowance	Other loans past due ¹
in € m.				
Banks and insurances	156	101	3	2,625
Manufacturing	427	207	41	709
Households	1,209	32	353	4,617
Public sector	118	59	–	23
Wholesale and retail trade	200	99	30	759
Commercial real estate activities	172	71	9	408
Other ²	1,400	408	81	1,858
Total loans impaired or past due	3,682	977	517	10,999

1 These are loans in which contractual interest or principal payments are one day or more past due and which are not impaired.

2 "Other" includes impaired loans of € 645 million to investment counseling and administration (reflected as fund management activities in 2009), € 186 million to construction and € 104 million to oil and gas industry and individually assessed loan loss allowances amounting to € 210 million, € 74 million and € 24 million respectively.

In addition to the allowances and provisions for loan losses reported in above tables, in 2009 the Group recorded € 413 million loan loss allowances and € (31) million provision for loan losses on collectively assessed loans considered performing. These amounts have been recorded in order to reflect incurred losses that have not yet been individually identified or provided for as part of the assessment of smaller-balance homogeneous loans.

As of December 31, 2009 the Group held € 3.3 billion allowance for loan losses, which was 46 % of the Group's loan exposure classified as impaired. Considering the allowance for loan losses and the collateral held against impaired loans, the impaired loan coverage was 72 % as of December 31, 2009.

In addition to the allowances and provisions for loan losses reported in above table, in 2008 the Group recorded € 444 million loan loss allowances and € 92 million provision for loan losses on collectively assessed loans considered performing. These amounts have been recorded in order to reflect incurred losses that have not yet been individually identified or provided for as part of the assessment of smaller-balance homogeneous loans.

As of December 31, 2008 the Group held € 1.9 billion allowance for loan losses, which was 53 % of the Group's loan exposure classified as impaired. Considering the allowance for loan losses and the collateral held against impaired loans, the impaired loan coverage was 85 % as of December 31, 2008.

The following tables present the Group's impaired loans, the corresponding provision for loan losses before recoveries, and recoveries, according to the industry sectors of the counterparties.

Table 14 Loans Impaired by Industry

Loans impaired by industry sector	Dec 31, 2009	12 month ending Dec 31, 2009	
	Total impaired loans	Provision for loan losses before recoveries	Recoveries
in € m.			
Banks and insurances	101	237	1
Manufacturing	698	137	13
Households	1,659	801	107
Public sector	45	16	–
Wholesale and retail trade	346	84	8
Commercial real estate activities	960	341	8
Fund management activities	848	66	–
Other ¹	2,544	1,113	29
Total loans impaired	7,201	2,795	166

¹ Impaired loans and individually assessed allowances in sector "Other" include primarily the impaired junior debt portion of one Leveraged Finance exposure which was reclassified in accordance with IAS 39.

Loans impaired by industry sector	Dec 31, 2008	12 month ending Dec 31, 2008	
	Total impaired loans	Provision for loan losses before recoveries	Recoveries
in € m.			
Banks and insurances	156	101	4
Manufacturing	427	110	21
Households	1,209	580	107
Public sector	118	73	–
Wholesale and retail trade	200	34	10
Commercial real estate activities	172	12	11
Other ¹	1,400	294	59
Total loans impaired	3,682	1,204	212

¹ "Other" includes impaired loans of € 645 million to investment counselling and administration (reflected as fund management activities in 2009), € 186 million to construction and € 104 million to oil and gas industry.

The following table breaks down the not impaired past due loan exposure carried at amortized cost according to their past due status.

Table 15 Loans Past Due but not Impaired

Loans past due but not impaired in € m.	Dec 31, 2009	Dec 31, 2008
Loans less than 30 days past due	6,192	8,345
Loans 30 or more, but less than 60 days past due	941	1,308
Loans 60 or more, but less than 90 days past due	558	939
Loans 90 days or more past due	925	407
Total loans past due but not impaired	8,616	10,999

Allowance for Off-balance Sheet Positions

The Group's allowance for off-balance sheet positions totaled € 207 million as of December 31, 2009 and included € 124 million of collectively assessed and € 83 million of individually assessed allowances. 57 % of the allowance for off-balance sheet positions was with counterparties domiciled in Western Europe, predominantly with clients domiciled in Germany, while industry concentrations were with manufacturing (33 %) and construction (19 %) and commercial real estate (16 %).

The Group's allowance for off-balance sheet positions totaled € 210 million as of December 31, 2008 and included € 112 million of collectively assessed and € 98 million of individually assessed allowances. 60 % of the allowance for off-balance sheet positions was with counterparties domiciled in Western Europe, predominantly with clients domiciled in Germany, while industry concentrations were with manufacturing (26 %) and construction (22 %).

Allowance for Credit Losses

The following tables provide a breakdown of the movements in the Group's allowance for credit losses.

Table 16 Development of Allowance for Credit Losses

Development of allowance for credit losses					2009	
		Allowance for loan losses		Allowance for off-balance sheet positions		Total
	Individually assessed	Collectively assessed	Individually assessed	Collectively assessed		
in € m.						
Balance, beginning of year	977	961	98	112	2,148	
Provision for credit losses	1,789	808	21	12	2,630	
Increases/newly approved allowances	1,880	808	48	12	2,748	
Reductions/releases of allowances	(91)	–	(27)	–	(118)	
Net charge-offs	(637)	(419)	(45)	–	(1,101)	
Charge-offs	(670)	(552)	(45)	–	(1,267)	
Recoveries	33	133	–	–	166	
Allowance related to acquisitions/divestitures	–	–	–	–	–	
Exchange rate-related differences/other	(101)	(36)	9	–	(127)	
Balance, end of year	2,029	1,314	83	124	3,550	

Development of allowance for credit losses					2008	
		Allowance for loan losses		Allowance for off-balance sheet positions		Total
	Individually assessed	Collectively assessed	Individually assessed	Collectively assessed		
in € m.						
Balance, beginning of year	930	775	101	118	1,924	
Provision for credit losses	382	702	(2)	(6)	1,076	
Increases/newly approved allowances	594	–	54	–	648	
Reductions/releases of allowances	(211)	–	(56)	–	(267)	
Net charge-offs	(301)	(477)	–	–	(778)	
Charge-offs	(364)	(626)	–	–	(990)	
Recoveries	63	149	–	–	212	
Allowance related to acquisitions/divestitures	–	–	–	–	–	
Exchange rate-related differences/other	(34)	(39)	(1)	–	(74)	
Balance, end of year	977	961	98	112	2,148	

6. Counterparty Credit Risk: Regulatory Assessment

6.1 Advanced Internal Ratings Based Approach

The Group applies the advanced IRBA for the majority of its advanced IRBA eligible credit portfolios to calculate its regulatory capital requirements according to the SolvV and received initial approval for using this approach from the BaFin in December 2007 with approval extensions obtained during 2008 and 2009. The advanced IRBA is the most sophisticated approach available under the regulatory framework for credit risk allowing the Group to make use of its internal rating methodologies as well as internal estimates of specific other risk parameters. While the new regulatory framework allows the first time usage of internal methods and parameters for regulatory purposes, these methods and parameters represent long-used key components of the internal risk measurement and management process supporting the credit approval process, the economic capital and expected loss calculation and the internal monitoring and reporting of credit risk. The relevant parameters include the probability of default (“PD”) and the loss given default (“LGD”) driving the regulatory risk-weight and the credit conversion factor (“CCF”) as part of the regulatory exposure at default (“EAD”) estimation.

The probability of default for customers is reflected in the Group’s internal rating systems. The Group assigns a probability of default to each relevant counterparty credit exposure as a function of a transparent and consistent 26-grid rating scale. The borrower ratings assigned are derived on the grounds of internally developed rating models which specify consistent and distinct customer-relevant criteria and assign a rating grade based on a specific set of criteria as given for a certain customer. The set of criteria is generated from information sets relevant for the respective customer segments like general customer behavior, financial and external data. The methods in use range from statistical scoring models to expert-based models taking into account the relevant available quantitative and qualitative information. Expert-based models are usually applied for counterparts in the asset classes central governments, institutions and corporates with the exception of small- and medium-sized entities. For the latter as well as for the retail segment statistical scoring or hybrid models combining both approaches are commonly used. Quantitative rating methodologies are developed based on applicable statistical modeling techniques, such as logistic regression. In line with Section 118 of SolvV, these models are complemented by human judgment and oversight to review model-based assignments and to ensure that the models are used appropriately. Although different rating methodologies are applied to the various customer segments in order to properly reflect customer-specific characteristics, they all adhere to the same risk management principles. Credit process policies provide guidance on the classification of customers into the various rating systems. For more information regarding the credit process and the respective rating methods used within that process, please refer to chapter 5.2 “Credit Risk Ratings and Governance”.

The approvals obtained from the BaFin as a result of the advanced IRBA audit processes allow the usage of 48 internally developed rating systems for regulatory capital calculation purposes out of which 37 rating systems were authorized in December 2007 and a further 11 less material ones followed in 2008 and 2009. Overall they cover all of the Group's material exposures in the advanced IRBA eligible exposure classes "central governments", "institutions", "corporates", and "retail".

The advanced IRBA coverage ratio is more than 90 % as of December 31, 2009 using an exposure measure according to Section 67 SolvV. This ratio excludes the exposures permanently assigned to the standardized approach (according to Section 70 SolvV) which are discussed in chapter 6.4 "Standardized Approach", other IRBA exposure (described in chapter 6.3) as well as securitization positions (please refer to chapter 7 for further details).

The few remaining advanced IRBA eligible portfolios are temporarily assigned to the standardized approach. With regard to these, an implementation plan and approval schedule have been set up and agreed with the competent authorities, the BaFin and the Bundesbank.

The Group applies internally estimated LGD factors as part of the advanced IRBA capital requirement calculation as approved by the BaFin. LGD is defined as the likely loss intensity in case of a counterparty default. It provides an estimation of the exposure that cannot be recovered in a default event and therefore captures the severity of a loss. Conceptually, LGD estimates are independent of a customer's probability of default. The concept of the LGD models ensures that the main drivers for losses (e.g., different levels and quality of collateralization and customer or product types or seniority of facility) are reflected in specific LGD factors.

As part of the application of the advanced IRBA the Group applies specific CCFs in order to calculate an EAD value. Conceptually the EAD is defined as the expected amount of the credit exposure to a counterparty at the time of its default. For advanced IRBA calculation purposes the bank applies the general principles as defined in Section 100 SolvV to determine the EAD of a transaction. In instances, however, where a transaction involves an unused limit a percentage share of this unused limit is added to the outstanding amount in order to appropriately reflect the expected outstanding amount in case of a counterparty default. This reflects the assumption that for commitments the utilization at the time of default might be higher than the current utilization. When a transaction involves an additional contingent component (e.g., guarantees) a further percentage share (usage factor) is applied as part of the CCF model in order to estimate the amount of guarantees drawn in case of default. Where required under the advanced IRBA the CCFs are internally estimated. The calibrations of such parameters are based on statistical experience as well as internal historical data and consider customer and product type specifics. As part of the approval process, the BaFin assessed the Group's CCF models and stated their appropriateness for use in the process of regulatory capital requirement calculations.

For derivative counterparty exposures as well as securities financing transactions (“SFT”) the Group makes use of the internal model method (“IMM”) in accordance with Section 222 et seqq. SolvV. In this respect securities financing transactions encompass repurchase transactions, securities or commodities lending and borrowing as well as margin lending transactions (including prime brokerage). The IMM is a more sophisticated approach for calculating EAD for derivatives and SFT, again requiring prior approval from the BaFin before its first application. By applying this approach, the Group builds its EAD calculations on a Monte Carlo simulation of the transactions’ future market values. Within this simulation process, interest and FX rates, credit spreads, equity and commodity prices are modeled by stochastic processes and each derivative and securities financing transaction is revalued at each point of a pre-defined time grid by the Group’s internally approved valuation routines. As the result of this process, a distribution of future market values for each transaction at each time grid point is generated. From these distributions, by considering the appropriate netting and collateral agreements, the Group derives the exposure measures potential future exposure, average expected exposure and expected positive exposure (“EPE”) mentioned in chapter 5.6 “Counterparty Credit Risk from Derivatives”. The EPE measure evaluated on regulatory eligible netting sets defines the EAD for derivative counterparty exposures as well as for securities financing transactions within the Group’s regulatory capital calculations for the great majority of the Group’s derivative and SFT portfolio. For the small population of transactions for which a simulation cannot be computed, the EAD used within the IMM is derived from the current exposure method.

Default Definition and Model Validation

A prerequisite for the development of rating methodologies and the determination of risk parameters is a proper definition, identification and storage of the default event of a customer. The Group applies a default definition in accordance with the requirements of Section 125 SolvV as confirmed by the BaFin as part of the IRBA approval process.

As an important element of the Group’s risk management framework the Group regularly validates its rating methodologies and credit risk parameters. Whereas the rating methodology validation focuses on the discriminatory power of the models, the risk parameter validation for PD, LGD and CCF analyzes the predictive power of those parameters when compared against historical default experiences.

According to the Group’s standards, and in line with the SolvV-defined minimum requirements, the parameters PD, LGD and CCF are reviewed annually and a recalibration of specific parameter settings is triggered if required. In addition, ad hoc reviews are performed where appropriate as a reaction to quality deterioration at an early stage due to systematic changes of input factors (e.g., changes in payment behavior) or changes in the structure of the portfolio. The reviews conducted in 2009 for IRBA rating systems triggered recalibrations of rating methodologies in 16 rating systems as well as 45 additional risk parameter settings (relating to CCFs and LGDs) out of 89 which apply to various IRBA rating systems. None of the recalibrations individually nor the impact of all recalibrations in the aggregate materially impacted the capital requirements of the Group.

The comparison of regulatory expected loss (“EL”) estimates with actual losses recorded provides some insight into the predictive power of the Group’s parameter estimations and, therefore, EL calculations.

The EL used in this comparison is the forecast credit loss from counterparty defaults over a one year period and is computed as the product of PD, LGD and EAD for performing exposures as at December 31st of the preceding year. The actual loss measure is defined by the Group as new provisions before recoveries on newly impaired exposures recorded in the Group’s financial statements through profit and loss during the respective reported years.

While the Group believes that this approach provides some insight, the comparison has limitations as the two measures are not directly comparable. In particular, the parameter LGD underlying the EL calculation represents the loss expectation until finalization of the workout period while the actual loss as defined above represents the accounting information recorded for one particular financial year. Furthermore, EL is a measure of expected credit losses for a snapshot of the Group’s credit exposure at a certain balance sheet date while the actual loss is recorded for a fluctuating credit portfolio over the course of a financial year, including losses in relation to new loans entered into during the year.

The table below provides a comparison of EL estimates for loans, commitments and contingent liabilities as of December 31, 2008 and December 31, 2007 with actual losses recorded for the financial years 2009 and 2008, by regulatory exposure class.

Table 17 Expected Loss and Actual Loss by IRBA Exposure Class

Expected loss and actual loss by IRBA exposure class	Dec 31, 2008	2009	Dec 31, 2007	2008
	Expected loss	Actual loss	Expected loss	Actual loss ¹
in € m.				
Central governments	2	–	2	–
Institutions	21	16	13	55
Corporates	591	1,665	320	251
Retail exposures secured by real estate property	120	140	127	125
Qualifying revolving retail exposures	2	7	2	4
Other retail exposures	311	315	226	223
Total expected loss and actual loss in the advanced IRBA	1,047	2,143	690	658

¹ Losses related to assets reclassified into loans under IAS 39 amendments are excluded from the actual loss for 2008 since, as of December 31, 2007, the related assets were not within the scope of the corresponding expected loss calculation for loans.

In 2009 actual losses exceeded the expected loss by 104 % driven mainly by material charges taken against a small number of exposures, primarily concentrated in Leveraged Finance, as well as the further deteriorating credit conditions not reflected in the expected losses for the Group’s corporate exposures at the beginning of the year.

The following table provides a year-to-year comparison of the actual loss by regulatory exposure class.

Table 18 Actual Loss by IRBA Exposure Class

Actual loss by IRBA exposure class			
in € m.	2009	2008¹	2007
Central governments	–	73	–
Institutions	16	55	4
Corporates	1,665	295	135
Retail exposures secured by real estate property	140	125	108
Qualifying revolving retail exposures	7	4	4
Other retail exposures	315	223	179
Total actual loss by IRBA in the advanced IRBA	2,143	775	430

¹ Actual losses for 2008 have been adjusted for this comparison to include € 117 million of losses related to assets reclassified into loans under IAS 39 amendments.

The observed increase in actual loss of € 1.4 billion in 2009 compared to 2008 reflects the overall deterioration in credit conditions, predominantly on the Group's exposure against corporates. This increase was driven by 83 % by assets which had been reclassified in accordance with IAS 39, relating primarily to exposures in Leveraged Finance. Further provisions against corporate exposures were a result of deteriorating credit conditions, predominantly in Europe and the Americas. Increases recorded for the Group's retail exposures reflected the Group's strategy to invest in higher margin consumer finance business and were mainly a result of exacerbating economic crisis in Spain which adversely affected the Group's mortgage loan and commercial finance portfolios there and by its consumer finance business in Poland and India.

The observed increase on actual loss of € 345 million in 2008 compared to 2007, which includes € 117 million of losses related to assets reclassified into loans under IAS 39 amendments, reflects the overall deterioration in credit conditions, predominantly on the Group's exposure against corporate and institution. Increases recorded for the Group's retail exposures were mainly a result of the deteriorating credit conditions in Spain and organic growth in Poland.

6.2 Advanced IRBA Exposure

The advanced IRBA requires differentiating a bank's credit portfolio into various regulatory defined exposure classes namely central governments, institutions, corporates and retail clients. The Group identifies the relevant regulatory exposure class for each exposure by taking into account factors like customer-specific characteristics, the rating system used as well as certain materiality thresholds which are regulatory defined.

The tables below show the Group's advanced IRBA exposures distributed on a rating scale and separately for each regulatory IRBA exposure class. The EAD is presented in conjunction with exposures-weighted average PD, LGD and risk weight ("RW") information. The information is shown after credit risk mitigation obtained in the form of financial, physical and other collateral as well as guarantees and credit derivatives. The effect of double default, as far as applicable, is considered in the average risk weight. It implies that for a guaranteed exposure a loss only occurs if the originator and the guarantor fail to meet their obligations at the same time. Regarding the assignment to the regulatory exposure classes it has to be noted that the exposures covered by guarantees or credit derivatives are assigned to the exposure class of the protection seller.

Table 19 EAD of Advanced IRBA Credit Exposures by PD Grade

IRBA exposures – by PD Grade								Dec 31, 2009	
	AAA – AA 0.00 – 0.04 %	A 0.04 – 0.11 %	BBB 0.11 – 0.5 %	BB 0.5 – 2.27 %	B 2.27 – 10.22 %	CCC 10.22 – 99.99 %	Default ¹	Total	
Central Governments									
EAD in € m.	40,572	1,877	1,027	347	577	0	49	44,449	
Average PD in %	0.00	0.07	0.31	1.06	3.67	19.50	100.00	0.18	
Average LGD in %	48.96	43.78	33.22	34.90	16.58	39.68	2.56	47.80	
Average RW in %	0.89	24.81	32.92	73.24	55.21	239.24	1.60	3.91	
Institutions									
EAD in € m.	46,460	45,918	19,994	4,222	1,068	535	483	118,680	
Average PD in %	0.04	0.07	0.18	1.16	4.54	27.94	100.00	0.69	
Average LGD in %	21.09	24.28	16.20	24.29	24.08	7.07	39.66	21.65	
Average RW in %	7.78	13.58	16.55	50.21	82.18	38.24	25.27	13.89	
Corporates									
EAD in € m.	103,738	48,426	51,752	58,137	12,779	12,522	9,264	296,618	
Average PD in %	0.03	0.07	0.24	1.20	4.27	22.67	100.00	4.56	
Average LGD in %	25.70	34.34	39.54	28.18	29.93	21.59	18.29	29.79	
Average RW in %	8.91	19.02	40.26	65.94	103.61	122.81	25.53	36.62	
Retail Exposures Secured by Real Estate Property									
EAD in € m.	3,435	2,952	6,549	27,854	12,374	1,287	1,199	55,650	
Average PD in %	0.03	0.08	0.27	1.27	4.27	16.98	100.00	4.17	
Average LGD in %	12.71	7.98	7.87	10.26	11.05	9.80	11.09	10.19	
Average RW in %	1.26	1.59	4.19	15.91	34.22	54.51	1.20	17.51	
Qualifying Revolving Retail Exposures									
EAD in € m.	7	60	81	98	56	12	16	330	
Average PD in %	0.04	0.08	0.26	1.15	4.68	17.88	100.00	6.71	
Average LGD in %	39.68	39.72	39.72	38.92	38.13	38.10	47.31	39.52	
Average RW in %	1.23	2.09	5.59	17.27	45.84	97.58	9.05	18.67	
Other Retail Exposures									
EAD in € m.	275	1,812	4,002	13,591	8,355	1,381	691	30,107	
Average PD in %	0.04	0.07	0.29	1.21	4.54	17.26	100.00	4.94	
Average LGD in %	38.45	39.62	38.95	33.50	36.81	43.05	42.97	36.21	
Average RW in %	5.02	8.40	21.04	37.26	56.75	93.77	2.00	40.26	
Total IRBA Exposures									
EAD in € m.	194,487	101,045	83,405	104,249	35,209	15,737	11,702	545,834	
Average PD in %	0.03	0.07	0.23	1.22	4.33	21.91	100.00	3.35	
Average LGD in %	29.24	29.27	31.35	23.96	24.54	22.03	19.87	27.85	
Average RW in %	6.83	15.95	30.70	48.18	66.57	111.78	21.51	27.26	

1 The relative low risk weights in the column "Default" reflect the fact that capital requirements for defaulted exposures are principally considered as a deduction from regulatory capital equal to the difference in expected loss and allowances.

IRBA exposures – by PD Grade								Dec 31, 2008	
	AAA – AA 0.00 – 0.04 %	A 0.04 – 0.11 %	BBB 0.11 – 0.5 %	BB 0.5 – 2.27 %	B 2.27 – 10.22 %	CCC 10.22 – 99.99 %	Default ¹	Total	
EAD in € m.	52,618	2,335	766	749	875	1	160	57,504	
Average PD in %	0.00	0.06	0.29	1.21	3.28	14.45	100.00	0.35	
Average LGD in %	46.26	49.87	42.52	47.36	11.34	49.50	33.03	45.80	
Average RW in %	2.56	29.00	51.60	115.89	32.98	234.21	12.50	6.38	
EAD in € m.	58,683	40,507	18,365	4,582	1,121	125	1,129	124,512	
Average PD in %	0.04	0.07	0.30	1.20	5.21	20.49	100.00	1.10	
Average LGD in %	29.71	32.59	27.66	35.00	35.88	21.02	28.94	30.58	
Average RW in %	9.62	19.09	28.04	66.14	126.58	121.19	40.01	18.94	
EAD in € m.	156,065	67,068	72,534	60,413	17,140	8,251	3,413	384,884	
Average PD in %	0.03	0.07	0.25	1.22	4.22	16.98	100.00	1.70	
Average LGD in %	28.98	39.54	39.16	28.09	35.28	37.86	28.06	33.06	
Average RW in %	9.23	20.95	41.75	62.66	119.97	213.77	33.94	35.32	
EAD in € m.	2,014	1,973	11,683	22,412	10,403	1,483	934	50,902	
Average PD in %	0.03	0.08	0.26	1.25	4.24	16.81	100.00	3.81	
Average LGD in %	53.28	23.29	9.32	9.85	11.15	15.43	10.51	12.41	
Average RW in %	5.29	4.58	4.67	15.06	35.14	86.26	1.28	17.81	
EAD in € m.	0	46	233	118	43	14	15	469	
Average PD in %	0.04	0.08	0.26	1.03	4.66	17.70	100.00	4.55	
Average LGD in %	42.00	40.53	39.77	38.09	38.91	38.98	49.96	39.65	
Average RW in %	1.24	2.17	5.56	15.56	46.50	98.60	5.46	14.27	
EAD in € m.	58	1,657	5,160	13,634	7,554	1,323	540	29,926	
Average PD in %	0.03	0.07	0.29	1.20	4.47	18.34	100.00	4.34	
Average LGD in %	35.96	39.04	36.14	35.10	39.70	46.07	45.69	37.34	
Average RW in %	4.50	8.39	19.42	39.16	61.16	102.26	1.24	41.64	
EAD in € m.	269,438	113,586	108,741	101,908	37,136	11,197	6,191	648,197	
Average PD in %	0.03	0.07	0.26	1.22	4.28	17.16	100.00	1.75	
Average LGD in %	32.70	36.98	33.89	25.48	28.88	35.67	27.29	32.29	
Average RW in %	7.98	19.98	34.38	49.54	82.31	182.53	26.64	28.51	

¹ The relative low risk weights in the column "Default" reflect the fact that capital requirements for defaulted exposures are principally considered as a deduction from regulatory capital equal to the difference in expected loss and allowances.

A year-on-year comparison reflects an overall decrease in IRBA exposures and in particular in the Group's corporate and central government segments. These decreases primarily reflect lower derivative exposures as discussed above.

The tables below show the Group's undrawn commitment exposure treated within the advanced IRBA and broken down by regulatory exposure class. It also provides the corresponding exposure-weighted credit conversion factors and resulting EADs.

Table 20 EAD of Undrawn Commitments in the Advanced IRBA by Exposure Class

EAD of undrawn commitments in the advanced IRBA by exposure class	Dec 31, 2009		
	Undrawn commitments	Weighted Credit Conversion Factor (CCF)	Exposure value for undrawn commitments (EAD)
	in € m.	in %	in € m.
Central governments	522	63	330
Institutions	2,223	39	868
Corporates	98,654	44	43,004
Retail exposures secured by real estate property	1,711	29	502
Qualifying revolving retail exposures	381	54	206
Other retail exposures	13,256	51	6,793
Total EAD of undrawn commitments in the advanced IRBA	116,747	44	51,703

EAD of undrawn commitments in the advanced IRBA by exposure class	Dec 31, 2008		
	Undrawn commitments	Weighted Credit Conversion Factor (CCF)	Exposure value for undrawn commitments (EAD)
	in € m.	in %	in € m.
Central governments	772	39	299
Institutions	1,608	45	723
Corporates	101,774	47	48,145
Retail exposures secured by real estate property	1,178	4	42
Qualifying revolving retail exposures	378	78	296
Other retail exposures	14,223	41	5,876
Total EAD of undrawn commitments in the advanced IRBA	119,933	46	55,381

In 2009 certain CCFs have been recalibrated, in particular in the retail segment, which account – amongst other factors – for the observed exposure-weighted CCF movements in comparison to 2008. However, as stated above, these recalibrations did not result in any material impact on the Group's capital requirements.

6.3 Other IRBA Exposure

As an IRBA institution, the Group is required to treat equity investments, collective investment undertakings (“CIU”) and other non-credit obligation assets within the IRBA. For these exposure types regulatory-defined IRBA risk weights are applied.

The Group uses the simple risk-weight approach according to Section 98 SolvV for recent investments in equity positions entered into since January 1, 2008. It distinguishes its exposure in equities which are exchange-traded and non-exchange-traded and then uses the regulatory-defined risk weights of 290 % or 370 %, respectively.

For certain CIU exposures the Group applies the “look through”-treatment which constitutes a decomposition of the CIU into its underlying investments. If such decomposition is performed the underlying investment components are assigned to their respective exposure class as if they were directly held. For the remaining collective investment undertakings the simple risk weight of 370 % is applied and assigned to the exposure class “equity investments”.

Exposures which are assigned to the exposure class “other non-credit obligation assets” receive an IRBA risk weight of 100 %.

The following table summarizes the Group’s IRBA exposure for equities, CIUs and other non-credit obligation assets where regulatory risk weights are applied. The volumes displayed are the regulatory exposure values. Credit risk mitigation techniques have not been applied.

Table 21 EAD of Equity Investments, CIUs and Other Non-credit Obligation Assets by Risk Weight

EAD of equity investments, CIUs and other non-credit obligation assets by risk weight in € m.	Dec 31, 2009	Dec 31, 2008
100 %	3,324	3,246
290 %	639	431
370 %	1,984	2,127
Total EAD of equity investments, CIUs and other non-credit obligation assets	5,947	5,804

6.4 Standardized Approach

The Group treats a small subset of its credit risk portfolio within the standardized approach. The standardized approach measures credit risk either pursuant to fixed risk weights, which are regulatory predefined, or through the application of external ratings.

The Group assigns certain credit exposures permanently to the standardized approach in accordance with Section 70 SolvV. These are predominantly exposures to the Federal Republic of Germany and other German public sector entities as well as to central governments of other European Member States that meet the required conditions. These exposures make up approximately half of the exposures carried in the standardized approach and receive predominantly a risk weight of zero percent. For internal purposes, however, these exposures are assessed via an internal credit assessment and fully integrated in the risk management and economic capital processes.

Moreover, in line with Section 66 SolvV, the Group assigns further – generally advanced IRBA eligible – exposures permanently to the standardized approach. This population comprises several small-sized portfolios, which are considered to be immaterial on a stand-alone basis for inclusion in the advanced IRBA.

Other credit exposures are temporarily assigned to the standardized approach and the Group plans to transfer them to the advanced IRBA over time. The prioritization and the corresponding transition plan is discussed and agreed with the competent authorities, the BaFin and the Bundesbank.

Equity positions entered into before January 1, 2008, are subject to the transitional arrangement to exempt them from the IRBA and a risk weight of 100 % is applied according to the standardized approach treatment.

In order to calculate the regulatory capital requirements under the standardized approach, the Group uses eligible external ratings from Standard & Poor's, Moody's, Fitch Ratings and in some cases from DBRS. These latter ratings have been newly applied in the standardized approach for a small number of exposures in 2009. Ratings are applied to all relevant exposure classes in the standardized approach. If more than one rating is available for a specific counterparty, the selection criteria as set out in Section 44 SolvV are applied in order to determine the relevant risk weight for the capital calculation. Moreover, given the low volume of exposures covered under the standardized approach and the high percentage of (externally rated) central government exposures therein, the Group does not infer borrower ratings from issuer ratings.

The following table shows the Group's exposure values in the standardized approach by risk weight. The information is shown before and after credit risk mitigation obtained in the form of eligible financial collateral, guarantees and credit derivatives.

Table 22 EAD in the Standardized Approach by Risk Weight

EAD in the standardized approach by risk weight in € m.	Dec 31, 2009		Dec 31, 2008	
	Before credit risk mitigation	After credit risk mitigation	Before credit risk mitigation	After credit risk mitigation
0 %	49,414	44,391	67,347	57,876
10 %	1,637	1,637	2,089	2,089
20 %	2,447	1,572	8,744	7,247
35 %	2,814	2,809	1,957	1,952
50 %	2,971	2,972	1,093	1,066
75 %	11,688	11,060	12,132	11,179
100 %	37,372	23,536	44,977	25,119
150 %	969	928	891	841
Total EAD in the standardized approach	109,312	88,905	139,230	107,369

6.5 Regulatory Application of Credit Risk Mitigation Techniques

Risk-weighted assets and regulatory capital requirements can be managed actively by credit risk mitigation techniques. As a prerequisite for recognition in regulatory calculations, the Group must adhere to certain minimum requirements as stipulated in the SolvV regarding collateral management, monitoring processes and legal enforceability.

The range of collateral being eligible for regulatory recognition is dependent predominantly on the regulatory capital calculation method used for a specific risk position. The principle is that a higher degree of sophistication with regard to the underlying methodology generally leads to a wider range of admissible collateral and options to recognize protection via guarantees and credit derivatives. However, also the minimum requirements to be adhered to and the mechanism available to reflect the risk mitigation benefits are predominantly a function of the regulatory calculation method applied.

The advanced IRBA generally accepts all types of financial collateral, as well as real estate, collateral assignments and other physical collateral. In the Group's application of the advanced IRBA, there is basically no limitation to the range of accepted collateral as long as the Group can demonstrate to the competent authorities that reliable estimates of the collateral values can be generated and that basic requirements are fulfilled.

The same principle holds true for taking benefits from guarantee and credit derivative arrangements. Within the advanced IRBA, again there are generally no limitations with regard to the range of eligible collateral providers as long as some basic minimum requirements are met. However, collateral providers' credit quality and other relevant factors are incorporated through the Group's internal models.

In the Group's advanced IRBA calculations, financial and other collateral is generally considered through an adjustment to the applicable LGD as the input parameter for determining the risk weight. For recognizing protection from guarantees and credit derivatives, generally a PD substitution approach is applied, i.e. within the advanced IRBA risk-weight calculation the PD of the borrower is replaced by the protection seller's PD. However, for certain guaranteed exposures and certain protection providers the so-called double default treatment is applicable. The double default effect implies that for a guaranteed exposure a loss only occurs if the originator and the guarantor fail to meet their obligations at the same time.

The following tables present the exposure values to the extent they are covered by eligible collateral, guarantees and credit derivatives in the advanced IRBA, broken down into the respective exposure classes.

Table 23 Collateralized Counterparty Credit Risk Exposure in the Advanced IRBA by Exposure Class

Collateralized counterparty credit risk exposure by IRBA exposure class ¹	Dec 31, 2009		
	Eligible advanced IRBA collateral	Guarantees and credit derivatives	Total
in € m.			
Central governments	1,606	1,330	2,936
Institutions	45,794	12,908	58,702
Corporates	93,551	28,436	121,987
Retail	46,614	598	47,212
Total collateralized counterparty credit risk exposure by IRBA exposure class	187,565	43,272	230,837

¹ Excludes collateralization which is reflected in the EPE measure.

Collateralized counterparty credit risk exposure by IRBA exposure class ¹	Dec 31, 2008		
	Eligible advanced IRBA collateral	Guarantees and credit derivatives	Total
in € m.			
Central governments	1,649	1,724	3,373
Institutions	32,147	9,060	41,207
Corporates	121,995	27,700	149,695
Retail	42,766	599	43,365
Total collateralized counterparty credit risk exposure by IRBA exposure class	198,557	39,083	237,640

¹ Excludes collateralization which is reflected in the EPE measure.

As noted above, the standardized approach sets stricter limitations with regard to the admissible scope of credit risk mitigation.

Collateral recognition is limited to eligible financial collateral, such as cash, gold bullion, certain debt securities, equities and CIUs, in many cases only with their volatility-adjusted collateral value. In its general structure, the standardized approach provides a preferred (lower) risk-weight for "claims secured by real estate property". Given this preferred risk-weight real estate is not considered a collateral item under the standardized approach. Further limitations must be considered with regard to eligible guarantee and credit derivative providers.

In order to reflect risk mitigation techniques in the calculation of capital requirements the Group applies the financial collateral comprehensive method since the higher sophistication of that method allows a broader range of eligible collateral. Within this approach, financial collateral is reflected through a reduction in the exposure value of the respective risk position, while protection taken in the form of guarantees and credit derivatives is considered by means of a substitution, i.e., the borrower's risk weight is replaced by the risk weight of the protection provider.

The following tables present the exposure values to the extent they are covered by financial collateral, guarantees and credit derivatives in the standardized approach broken down into the respective exposure classes.

Table 24 Collateralized Counterparty Credit Risk Exposure in the Standardized Approach by Exposure Class

Collateralized counterparty credit risk exposure in the standardized approach by exposure class in € m.	Dec 31, 2009		
	Financial collateral	Guarantees and credit derivatives	Total
Central governments	4,982	–	4,982
Regional governments and local authorities	21	–	21
Other public sector entities	–	–	–
Multilateral development banks	–	–	–
International organizations	–	–	–
Institutions	399	–	399
Covered bonds issued by credit institutions	–	–	–
Corporates	11,507	63	11,570
Retail	608	20	628
Claims secured by real estate property	6	–	6
Collective investment undertakings	–	–	–
Equity investments	2,857	–	2,857
Other items	–	–	–
Past due items	27	4	31
Total collateralized counterparty credit risk exposure in the standardized approach	20,407	87	20,494

Collateralized counterparty credit risk exposure in the standardized approach by exposure class in € m.	Dec 31, 2008		
	Financial collateral	Guarantees and credit derivatives	Total
Central governments	9,216	23	9,239
Regional governments and local authorities	35	–	35
Other public sector entities	–	–	–
Multilateral development banks	–	–	–
International organizations	–	–	–
Institutions	272	–	272
Covered bonds issued by credit institutions	–	–	–
Corporates	18,284	62	18,346
Retail	934	20	954
Claims secured by real estate property	4	–	4
Collective investment undertakings	–	–	–
Equity investments	3,074	–	3,074
Other items	–	–	–
Past due items	41	8	49
Total collateralized counterparty credit risk exposure in the standardized approach	31,860	113	31,973

7. Securitization

7.1 Overview of Activities Undertaken by the Group

The Group engages in various business activities that use securitization structures. The principal purposes are to provide clients with access to risk and returns related to specific portfolios of assets, to provide clients with access to funding and to manage the Group's credit risk exposure.

A participant in the securitization market is typically an originator, sponsor or investor. An originator is an institution which is involved, either itself or through its' related entities directly or indirectly, in the origination or purchase of exposures with the intention to securitize. In a sponsorship role, an institution establishes and manages an asset-backed commercial paper program ("ABCP") or other securitization transaction. All other securitization would be in the capacity as an investor.

As an originator, the Group uses securitizations primarily as a strategy to reduce credit risk. The Loan Exposure Management Group uses, amongst others, synthetic securitizations to manage the credit risk of loans and lending-related commitments of the international investment-grade portfolio and the medium-sized German companies' portfolio within the Corporate and Investment Bank group division. The credit risk is predominantly transferred to counterparties synthetically through financial guarantees and, to a lesser extent, with first loss credit derivatives. Other methods used to mitigate credit risk are the issuance of credit-linked notes and synthetic collateralized loan obligations supported by financial guarantees. Using the above mentioned techniques, LEMG transferred a risk volume of € 19.2 billion in 2009 which is recognized for regulatory purposes. The transferred risk volume in 2008 amounted to € 18.5 billion. The observed increase of the volume transferred relates mainly to the replacement of two securitizations expired in 2009 with two new ones.

During 2008 the Group also entered into securitization transactions with special purpose entities ("SPEs") for leveraged loans and commercial real estate loans in the amount of € 10.4 billion. The SPEs issued two tranches of notes, and the junior (equity) notes are substantially held by third parties. The Group holds all the senior notes issued by the SPEs, which are reported as loan assets in the financial accounts, and as securitization positions for regulatory capital calculations. Additional amounts of leveraged loans and commercial real estate loans securitized in 2009 through the use of similar structures were not substantial.

During 2009 the Group has entered into two securitization transactions involving the purchase of first-loss credit default swap protection on portfolios of derivative counterparty credit risk exposures in the amount of € 5.5 billion and \$ 20.0 billion, respectively. The Group reports the unprotected senior tranches as securitization positions for the purpose of regulatory capital calculations.

On a limited basis the Group has entered into securitization transactions as part of an active liquidity risk management strategy. During 2008 and 2009 those securitizations transferred assets with a total volume of € 38 billion to SPEs, with the Group retaining all positions of the structures. These transactions do not transfer risk, so there is no securitization benefit for regulatory capital or financial reporting. The sole purpose of the structure is to provide a mechanism by which assets can be transformed into pledgeable securities. The activities are therefore not disclosed in the quantitative part of this chapter.

The Group sets up, sponsors and administers a number of ABCP programs. These programs provide customers with access to liquidity in the commercial paper market and create investment products for clients. As an administrative agent for the commercial paper programs, the Group facilitates the purchase of non-Deutsche Bank Group loans, securities and other receivables by the commercial paper conduit (“conduit”), which then issues to the market high-grade, short-term commercial paper, collateralized by the underlying assets, to fund the purchase. The conduits require sufficient collateral, credit enhancements and liquidity support to maintain an investment grade rating for the commercial paper. The Group is the liquidity provider to these conduits and therefore exposed to changes in the carrying value of their assets. The collateral in the conduits includes a range of asset-backed loans and securities, including aircraft leasing, student loans, trust preferred securities and residential- and commercial-mortgage-backed securities. The credit enhancement and liquidity facilities with these conduits are part of the Group’s regulatory banking book. There are also instances in which the Group will face the conduit on foreign exchange and interest rate swaps which are recorded in the trading book.

Furthermore, the Group is an investor in third party securitizations through investments in third party issued securitizations tranches or provides liquidity/credit support to which it, and in some instances other parties, provide financing.

The Group sponsors SPEs for which it originates or purchases assets with an intention to securitize these assets, providing clients with access to assets and risks to meet their needs. These assets are predominantly commercial and residential whole loans or mortgage-backed securities. The SPEs fund these purchases by issuing multiple tranches of securities, the repayment of which is linked to the performance of the assets in the SPEs.

Additionally, the Group assists third party securitizations by providing derivatives related to securitization structures. These include currency, interest rate, equity and credit derivatives. In its securities trading capacity or as a result of current market disruptions, the Group may also retain certain tranches of an SPE’s capital structure, which are recorded in the regulatory banking book and attract capital requirements according to the regulatory securitization framework.

The Group also performs trading activities relating to securitization exposures, which in particular include the Group's Credit Correlation Trading business. This business offers complex credit products to clients and dynamically hedges its trading market risk exposures. The traded instruments in the Credit Correlation business mainly comprise CDO tranches referencing synthetic pools of credit exposures, including standard tranches of credit indices, first-to-default credit derivatives, single-name credit derivatives and indices based on credit default swaps.

During 2008 and 2009, the Group reclassified eligible assets to loans from either trading or available for sale for financial reporting. This reclassification also resulted in some reclassifications of assets from the regulatory trading to banking book. Some of these exposures are considered securitization positions for regulatory capital purposes; they amounted to € 9.5 billion as of December 31, 2009. For further detail on reclassified assets, please refer to Note [12] "Amendments to IAS 39 and IFRS 7, 'Reclassification of Financial Assets'" in the Group's Financial Report 2009. In addition, the Management Report of the Group's Financial Report 2009 includes a discussion of reclassified assets.

7.2 Accounting and Valuation Policies for Securitizations

The Group securitizes various consumer and commercial financial assets, by selling these assets to an SPE, which in turn issues securities to investors. The transferred assets may qualify for derecognition in full or in part, under the Group's IFRS policy on derecognition of financial assets. Synthetic securitization structures typically involve derivative financial instruments. Transfers that do not qualify for derecognition may be reported as secured financing or result in the recognition of continuing involvement liabilities. The investors and the securitization vehicles generally have no recourse to the Group's other assets in cases where the issuers of the financial assets fail to perform under the original terms of those assets.

The Group may consolidate SPEs for financial statement purposes that it establishes, sponsors or with which it has a contractual relationship. The Group will consolidate an SPE when it has the power to govern the financial and operating policies, generally accompanying a shareholding, either directly or indirectly, of more than one half of the voting rights according to the Standing Interpretations Committee Interpretation No. 12 (SIC-12) "Consolidation – Special Purpose Vehicles". When the activities are so narrowly defined, or if it is not evident who controls the financial and operating policies of the SPE, a range of other factors are considered. These factors include whether (1) the activities are being conducted on the Group's behalf according to specific business needs so that benefits are obtained from the entity's operations, (2) through decision-making powers the majority of the benefits are obtained, (3) the majority of the benefits of the activities of the entity will be obtained, and (4) the majority of the residual ownership risks related to the assets is retained in order to obtain the benefits from its activities. The Group consolidates an SPE if an assessment of the relevant factors indicates that the Group controls it. The Group reassesses the treatment of SPE's for consolidation when there is a change in the SPE's arrangements or the substance of the relationship between the Group and an SPE changes.

When these assets are held at fair value, consistent with the valuation of similar financial instruments, fair value of retained tranches or the financial assets is initially and subsequently determined using market price quotations where available or internal pricing models that utilize variables such as yield curves, prepayment speeds, default rates, loss severities, interest rate volatilities and spreads. The assumptions used for valuation are based on observable transactions in similar securities and are verified by external pricing sources, where available.

For further detail on the Group's accounting and valuation policies please refer to Note [1] "Significant Accounting Policies" and [13] "Financial Instruments carried at Fair Value" in the Group's Financial Report 2009. In addition, the Management Report of the Group's Financial Report 2009 includes a discussion of SPEs.

7.3 Regulatory Securitization Framework

The Solvency Regulations, pursuant to Section 225 et seqq. SolvV, establish the regulatory capital calculation rules for securitization positions. The SolvV also specifically defines a securitization transaction for regulatory reporting and the capacity in which an institution could acquire a position and the appropriate capital requirement.

A securitization transaction is defined as a transaction in which payments depend on the performance of an underlying pool of exposures and investments in the securitization are tranced. Tranching results in a ranking among investments in the securitization. This determines the order and the amount of payments or losses to be directed to the holder of the position, that is, the waterfall structure. A securitization position can be acquired in various forms including investments in securitization tranches, derivative transactions for hedging interest rate and currency risks included in the waterfall, liquidity facilities, credit enhancements, unfunded credit protection or collateral for securitization tranches.

The current regulatory securitization framework requires the disclosure of banking book securitization positions as well as interest rate and currency derivative transactions related to securitizations whether related to banking or trading book.

Regulatory Capital Calculation Methods

The methodologies applied to securitization positions for regulatory capital calculation purposes are defined in the SolvV. For originator transactions, an IRBA rating system must be in place for the underlying pool, in order to apply the IRBA securitization approach. If not in place, the securitization standardized approach is used. For securitization positions resulting from sponsor or investor activities, IRBA eligibility is required.

Within the securitization IRBA the Group applies the ratings based approach (“RBA”) if public external ratings are available. Eligible external issue ratings are taken from Standard & Poor’s, Moody’s and Fitch Ratings and in some cases from DBRS. If more than one rating is available for a specific securitization position, the selection criteria following a hierarchy structure as set forth in Section 236 et seqq. SolvV are applied to determine the relevant risk weight for the capital calculation. The regulatory capital requirement for ABCP conduit securitization positions is calculated using the internal assessment approach (“IAA”) for non-externally-rated exposure when applicable. The Group has received approval from the BaFin to apply the IAA to approximately 80 % of its ABCP conduit securitization exposure.

For securitization positions which do not have an eligible external rating or do not qualify for the IAA, the Group applies the inferred ratings method according to Section 256 SolvV, or the supervisory formula approach (SFA), according to Section 258 SolvV. In all other cases, the exposures are deducted from the Group’s own funds. When applying the SFA, the Group estimates the risk parameters PD and LGD for the assets of the securitization portfolio, by using its internally developed rating systems approved for such assets. In 2009 the Group developed new rating systems for homogenous pools of assets to be applied to assets that have not been originated by the Group. The rating systems are based on historical default and loss information from comparable assets. Risk parameters PD and LGD are derived on risk pool level.

In situations where the standardized approach is applied for the capital calculation, the Group applies the RBA using the standardized risk weights as defined in the regulatory securitization framework. Qualifying external ratings are obtained from the rating agencies, Standard & Poor’s, Moody’s and Fitch Ratings and in some cases from DBRS. The Group applies the alternative risk weight calculation to unrated securitization positions, as outlined in Section 243 SolvV.

Regulatory Good Practice Guidelines

The European Banking Federation, the Association for Financial Markets in Europe (formerly London Investment Banking Association), the European Savings Banks Group and the European Association of Public Banks and Funding Agencies published the “Industry good practice guidelines on Pillar 3 disclosure requirements for securitization” in December 2008, which was slightly revised in 2009/2010. The Group’s Pillar 3 disclosures are materially in compliance with these guidelines.

7.4 Securitization Details

The amounts reported in the following tables are based on the regulatory securitization framework. These amounts differ from, and are not directly comparable to, the amounts reported in the chapter Management Report, “Special Purpose Entities” in the Group’s Financial Report 2009, in particular due to the differences in the respective consolidation principles discussed above.

The Group is only exposed to credit risks related to the exposures securitized, as shown below, to the extent it has retained or purchased any of the related securitization positions and the risk of the retained or purchased positions depends on the relative position in the waterfall of the securitization transaction.

The following tables detail the total outstanding exposure the Group has securitized in its capacity as an originator through traditional or synthetic securitization transactions. The tables provide information on the underlying securitization asset pool which was either originated from the Group’s balance sheet or acquired from third parties. The amounts reported are either the carrying values as reported in the Group’s consolidated financial statements, best estimates of their fair value or the current amount of underlying exposures outstanding. The latter two are typically used in cases where the underlying asset pool is no longer recorded on the Group’s balance sheet.

For sponsor relationships, the total outstanding exposures securitized reported in the tables below represent the total outstanding exposure of the third party entities issuing the securities and other receivables. The Group’s maximum exposure as of December 31, 2009 with regard to the € 237 billion exposures securitized shown under the “sponsor” columns below was € 23.5 billion, excluding the Group’s exposure also shown in the “originator” columns. The remaining exposure is held by third parties. In 2008 the Group’s maximum exposure with regard to € 296 billion exposures securitized resulting from sponsoring activities amounted to € 35 billion, again excluding the Group’s exposure also shown in the “originator” columns. The decrease resulted primarily from a reduction in the exposure types of credit card receivables and consumer loans. The carrying values reported in the tables are derived using information received from servicer reports of the third parties that the conduits have the relationships with or, in certain instances, based on the Group’s best estimate of their value using a number of assumptions.

Table 25 Outstanding Exposures Securitized by Exposure Type (Overall Pool Size)

Outstanding exposures securitized by exposure type ¹	Dec 31, 2009			
	Originator		Sponsor ²	
	Traditional	Synthetic	Traditional	Synthetic
in € m.				
Residential mortgages	19,596	–	17,117	–
Commercial mortgages	15,611	–	1,276	–
Credit card receivables	–	–	90,970	–
Leasing	–	–	7,667	–
Loans to corporates or SMEs ³ (treated as corporates)	9,093	21,875	27,833	2,655
Consumer loans	–	–	24,813	–
Trade receivables	–	–	756	252
Securitizations (re-securitizations)	6,778	–	320	–
Other assets	–	19,506 ⁴	62,994	527
Total outstanding exposures securitized	51,078	41,381	233,746	3,434

1 For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see table 29.

2 Included under "Sponsor" are € 12 billion exposures securitized, of which the Group originated € 8 billion, equally included under "Originator".

3 SMEs are small- or medium-sized entities.

4 Includes EAD for derivative exposures securitized.

Outstanding exposures securitized by exposure type ¹	Dec 31, 2008			
	Originator		Sponsor ²	
	Traditional	Synthetic	Traditional	Synthetic
in € m.				
Residential mortgages	24,585	–	19,671	291
Commercial mortgages	15,094	677	10,285	–
Credit card receivables	–	–	126,317	–
Leasing	–	–	12,522	–
Loans to corporates or SMEs ³ (treated as corporates)	7,232	20,810	26,320	7,768
Consumer loans	–	–	42,198	–
Trade receivables	–	–	1,426	–
Securitizations (re-securitizations)	6,288	–	6,748	–
Other assets	–	–	42,713	–
Total outstanding exposures securitized	53,199	21,487	288,200	8,059

1 For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see table 29.

2 Included under "Sponsor" are € 8.7 billion exposures securitized, of which the Group originated € 6.6 billion, equally included under "Originator".

3 SMEs are small- or medium-sized entities.

The following tables give details for exposures for which the Group is an originator or sponsor, showing the amount of impaired or past due exposures securitized by exposure type and, hence, the credit quality of the underlying securitization asset pool. For sponsor relationships, it is the total impaired and past due assets in the asset pool of the third party entities issuing the securities and other receivables to the sponsoring conduits that are reported in the tables. The information was primarily derived from underlying positions' investor reports.

Separately, the tables detail losses the Group recognized in 2009 and 2008 for retained or purchased securitization positions as originator or sponsor by exposure type. The losses are those reported in the consolidated statement of income. The amounts are the actual losses in the underlying asset pool to the extent that these losses are allocated to the retained or purchased securitization positions held by the Group after considering any eligible credit protection. This applies to both traditional and synthetic transactions.

In case of the Group being considered an originator, the credit quality mainly for residential mortgage securitizations decreased in 2009, as reflected through an increase of impaired or past due loans of € 2.7 billion to € 7.5 billion. Certain losses were suffered by the Group during 2009 in residential mortgage securitizations and loans to corporates or small and medium enterprises. For sponsor relationships, however, the exposures of impaired/past due loans decreased especially for the exposure type consumer loans by € 1.1 billion as of December 31, 2009.

Table 26 Impaired and Past Due Exposures Securitized and Losses Recognized by Exposure Type (Overall Pool Size)

Impaired and past due exposures securitized and losses recognized by exposure type ¹	Dec 31, 2009		2009	
	Impaired/past due		Losses	
	Originator	Sponsor	Originator	Sponsor
in € m.				
Residential mortgages	7,469	359	199	–
Commercial mortgages	145	–	–	–
Credit card receivables	–	3,933	–	–
Leasing	–	50	–	–
Loans to corporates or SMEs ² (treated as corporates)	280	828	109	–
Consumer loans	–	1,896	–	–
Trade receivables	–	31	–	–
Securitized (re-securitized)	178	100	3	–
Other assets	–	510	–	–
Total impaired and past due exposures securitized and losses recognized	8,072	7,707	311	–

1 For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see table 29.

2 SMEs are small- or medium-sized entities.

Impaired and past due exposures securitized and losses recognized by exposure type ¹	Dec 31, 2008		2008	
	Impaired/past due		Losses	
	Originator	Sponsor	Originator	Sponsor
in € m.				
Residential mortgages	4,796	212	43	–
Commercial mortgages	28	–	–	–
Credit card receivables	–	4,734	–	–
Leasing	–	50	–	–
Loans to corporates or SMEs ² (treated as corporates)	164	441	–	–
Consumer loans	–	3,025	–	–
Trade receivables	–	60	–	–
Securitized (re-securitized)	30	–	–	–
Other assets	–	596	–	–
Total impaired and past due exposures securitized and losses recognized	5,018	9,118	43	–

1 For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see table 29.

2 SMEs are small- or medium-sized entities.

The following table provides the amount of securitization positions retained or purchased by exposure type. Amounts reported are the regulatory exposure values prior to the application of credit risk mitigation.

The variance in relation to prior year mainly relates to the exposure type “other assets” which reflects new senior tranche positions resulting from two synthetic securitizations executed in 2009.

Table 27 Securitization Positions Retained or Purchased by Exposure Type

Securitization positions retained or purchased by exposure type ¹ in € m.	Dec 31, 2009	Dec 31, 2008
Residential mortgages	8,426	10,534
Commercial mortgages	5,624	6,639
Credit card receivables	494	2,830
Leasing	2,538	5,236
Loans to corporates or SMEs ² (treated as corporates)	39,447	38,287
Consumer loans	6,178	7,562
Trade receivables	224	386
Securitizations (re-securitizations)	1,571	3,158
Other assets	29,034	13,742
Total securitization positions retained or purchased	93,536	88,374

¹ For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see table 29.

² SMEs are small- or medium-sized entities.

The following table provides a geographic breakdown of the securitization positions retained or purchased based on the country of domicile of the obligors of the exposures securitized. The securitization exposure backed by exposure in America decreased by € 1.1 billion. Taking into account that the Group has an overall increase in securitization positions retained or purchased in Europe, the Americas and Asia/Pacific due to new securitization transactions, the reduction of securitization backed by underlying pools in the Americas was relatively even bigger.

Table 28 Securitization Positions Retained or Purchased by Region

Securitization positions retained or purchased by geographic region ¹ in € m.	Dec 31, 2009	Dec 31, 2008
Europe	35,421	33,911
Americas	48,530	49,605
Asia/Pacific	9,357	4,690
Other	228	168
Total securitization positions retained or purchased	93,536	88,374

¹ For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see table 29.

The tables below show the amount of securitization positions retained or purchased based on regulatory exposure values, prior to application of credit risk mitigation, broken down by risk weight bands for December 31, 2009 and December 31, 2008. In addition the resulting capital requirements by risk weight band are provided separately for the IRBA and the standardized approach.

The tables below reflect an increase in capital requirements for the Group's securitization positions which mainly results from the general trend of rating downgrades either by external rating agencies in the case of RBA application or the Group's internal risk management function for IAA application. The increase in the first risk weight band below or equal 10 % is a result of the Group's new originator securitizations mentioned above.

Table 29 Securitization Positions Retained or Purchased by Risk Weight Band

Securitization positions retained or purchased by risk weight band	Dec 31, 2009		
	Exposure amount	Capital requirements, IRBA ¹	Capital requirements, standardized approach
in € m.			
≤ 10 %	63,811	376	–
> 10 % ≤ 20 %	6,457	59	10
> 20 % ≤ 50 %	11,324	317	12
> 50 % ≤ 100 %	6,103	370	7
> 100 % ≤ 650 %	3,030	305	73
> 650 < 1250 %	50	24	–
1250 % / Deduction	2,761	1,816	249
Total securitization positions retained or purchased	93,536	3,267	351

1 After considering value adjustments according to Section 253 (3) and 268 (2) SolvV.

Securitization positions retained or purchased by risk weight band	Dec 31, 2008		
	Exposure amount ¹	Capital requirements, IRBA ²	Capital requirements, standardized approach
in € m.			
≤ 10 %	51,521	308	–
> 10 % ≤ 20 %	21,473	222	18
> 20 % ≤ 50 %	11,839	275	2
> 50 % ≤ 100 %	2,056	119	4
> 100 % ≤ 650 %	532	69	8
> 650 < 1250 %	7	4	–
1250 % / Deduction	946	526	32
Total securitization positions retained or purchased	88,374	1,523	64

1 2008 exposure assignments to risk weight bands adjusted for considering regulatory scaling factor of 1.06.

2 After considering value adjustments according to Section 253 (3) and 268 (2) SolvV.

The following tables detail securitization activities undertaken during 2009 and 2008, the majority of which relates to renewed sponsor activity related to previously existing transactions. The tables show securitized exposure (i.e., the underlying pools) separately for originator and sponsor activities, broken down by exposure type and into traditional and synthetic transactions. Gains or losses resulting from the sales of exposures from traditional securitizations are those reported in the consolidated statement of income.

As already outlined in the introduction, the Group entered into two securitization transactions referencing derivative claims, where the Group reports the respective senior tranche as a securitization position. These securitizations, as well as the replacement of certain LEMG securitizations, materially comprise the Group's securitization activities as originator in 2009.

Table 30 Securitization Activity – Total Outstanding Exposures Securitized by Exposure Type

Securitization activity during 2009 – outstanding exposures securitized by exposure type ¹	Dec 31, 2009		Originator	Sponsor ²	
	Traditional	Synthetic	2009	Dec 31, 2009	
			Realized gains (losses) from sales/ liquidations	Traditional	Synthetic
in € m.					
Residential mortgages	-	-	-	-	-
Commercial mortgages	-	-	-	-	-
Credit card receivables	-	-	-	-	-
Leasing	-	-	-	605	-
Loans to corporates or SMEs ³ (treated as corporates)	460	2,657	(27)	3,196	-
Consumer loans	-	-	-	13,608	-
Trade receivables	-	-	-	-	-
Securitized (re-securitized)	-	-	-	-	-
Other assets	-	19,506 ⁴	-	33,649	-
Total outstanding exposures securitized during 2009	460	22,163	(27)	51,058	-

1 For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see table 29.

2 Included under "Sponsor" are € 0.7 billion exposures securitized, of which the Group originated € 0.5 billion, equally included under "Originator".

3 SMEs are small- or medium-sized entities.

4 Includes EAD for derivative exposures securitized.

Securitization activity during 2008 – outstanding exposures securitized by exposure type ^{1,2}	Dec 31, 2008		Originator	Sponsor	
	Traditional	Synthetic	2008	Dec 31, 2008	
			Realized gains (losses) from sales/ liquidations	Traditional	Synthetic
in € m.					
Residential mortgages	-	-	-	89	-
Commercial mortgages	3,130	677	-	399	-
Credit card receivables	-	-	-	75,060	-
Leasing	-	-	-	1,210	-
Loans to corporates or SMEs ³ (treated as corporates)	4,509	500	-	7,228	-
Consumer loans	-	-	-	22,190	-
Trade receivables	-	-	-	-	-
Securitized (re-securitized)	6,005	-	35	-	-
Other assets	-	-	-	11,343	-
Total outstanding exposures securitized during 2008	13,644	1,177	35	117,519	-

1 For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see table 29.

2 Included under "Sponsor" are € 4.9 billion exposures securitized, of which the Group originated € 4.7 billion, equally included under "Originator".

3 SMEs are small- or medium-sized entities.

8. Trading Market Risk

The vast majority of the Group's businesses are subject to market risk, defined as the potential for change in the market value of the Group's trading and investing positions. Risk can arise from adverse changes in interest rates, credit spreads, foreign exchange rates, equity prices, commodity prices and other relevant parameters, such as market volatility.

The primary objective of Market Risk Management is to ensure that the Group's business units optimize the risk-reward relationship and do not expose it to unacceptable losses. To achieve this objective, Market Risk Management works closely together with risk takers (the business units) and other control and support groups.

The Group differentiates between two substantially different types of market risk:

- Trading market risk arises primarily through the market-making activities of the Corporate and Investment Bank division. This involves taking positions in debt, equity, foreign exchange, other securities and commodities as well as in equivalent derivatives.
- Nontrading market risk in the form of equity risk arises primarily from non-consolidated strategic investments in the Corporate Investment portfolio, alternative asset investments and equity compensation. Interest risk stems from the Group's nontrading asset and liability positions. Other nontrading market risk elements are risks arising from asset management and fund related activities, pension risks as well as model risks in PBC, GTB and PWM, which are derived by shocking assumptions on client behavior in combination with interest rate movements. In addition foreign currency risks may arise from capital and retained earnings positions held in non-euro currencies for those currencies for which hedge exemptions are in place.

Trading Market Risk Management Framework

The Group's primary instrument to manage trading market risk is the limit setting process. The Group's Management Board, supported by Market Risk Management, which is part of the Group's independent legal, risk & capital function, sets a Group-wide value-at-risk and economic capital limits for the market risk in the trading book. Market Risk Management sub-allocates this overall limit to the group divisions (e.g., Global Markets and Corporate Finance) and individual business areas (e.g., Global Rates, Global Markets Equity, etc.) based on anticipated business plans and risk appetite. Within the individual business areas, the business heads or Chief Operating Officers may establish business limits by sub-allocating the Market Risk Management limit down to individual portfolios or geographical regions.

Value-at-risk and economic capital limits are not sufficient for managing all types of market risk on their own. In addition, Market Risk Management operates sensitivity and concentration/liquidity limits. A distinction is made between Market Risk Management limits and business limits for sensitivities and concentration/liquidity. In practice, the Market Risk Management limits are likely to be a relatively small number of key limits necessary to capture an exposure to a particular risk factor and will tend to be global in nature rather than for any particular geographical region.

To manage the exposures inside the limits, the risk takers apply several risk mitigating measures, most notably the use of:

- **Diversification effects.** Diversification is a portfolio strategy designed to reduce exposure by combining a variety of positions. Because some investments rise in value while others decline, diversification can help to lower the overall level of risk for a given portfolio.
- **Hedging.** Hedging involves taking positions in related securities, including derivative products, such as futures, swaps and options. Hedging activities may not always provide effective mitigation against losses due to differences in the terms, specific characteristics or other basis risks that may exist between the hedge instrument and the exposure being hedged.

Trading Market Risk Management: Refined Framework and De-risking Discipline in 2009

In 2009, Market Risk Management implemented new processes to improve the monitoring and reporting of key risks. These processes included creating a list of exposures which had been targeted for de-risking. The identification of such positions was guided by a four step de-risking framework:

Reduce risk concentrations:

- Adapt position size to liquidity environment
- Invest in unwinding most illiquid risk positions

Continued use of active hedging:

- Active program of macro hedging
- Improve hedging efficiency of individual strategies

De-lever balance sheet:

- Manage down gross and net exposure
- Align market risk appetite to new balance sheet and leverage targets

Reduce uncertainty:

- Avoid exposure to difficult to value products
- Reduce reliance on complex, highly structured products

As a result of the continued focus, the majority of these key exposures have been reduced to appropriate levels. For a minority of exposures, de-risking progress has been slowed by the current market conditions, and potential for future loss remains. Action has been taken to reduce this potential. The positions have been segregated from the 'Ongoing' trading books, and are managed in separate 'Legacy' books. Hedges have also been purchased to limit the downside risk. The Group continues to seek and take market opportunities to reduce these risks.

The plan was part of a wider recalibration of the business model. This aims to increase the proportion of revenues earned from the most liquid flow markets, and to reduce reliance on exotic and structured businesses which may lack liquidity.

Quantitative Risk Management Tools

Value-at-Risk

Value-at-risk is a quantitative measure of the potential loss (in value) of trading positions due to market movements that will not be exceeded in a defined period of time and with a defined confidence level.

The Group's value-at-risk for the trading businesses is based on its own internal value-at-risk model. In October 1998, the German Banking Supervisory Authority (now the BaFin) approved the internal value-at-risk model for calculating the regulatory market risk capital for the Group's general and specific market risks. Since then the model has been periodically refined and approval has been maintained.

The Group calculates value-at-risk using a 99 % confidence level and a holding period of one day. This means the Group estimates that there is a 1 in 100 chance that a mark-to-market loss from the Group's trading positions will be at least as large as the reported value-at-risk. For regulatory reporting, the holding period is ten days.

The Group uses historical market data to estimate value-at-risk, with an equally-weighted 261 trading day history. The calculation employs a Monte Carlo simulation technique, and the Group assumes that changes in risk factors follow a certain distribution, e.g., normal or logarithmic normal distribution. To determine the Group's aggregated value-at-risk, the Group uses observed correlations between the risk factors during this 261 trading day period.

The Group's value-at-risk model is designed to take into account the following risk factors: interest rates, credit spreads, equity prices, foreign exchange rates and commodity prices, as well as their implied volatilities and common basis risk. The model incorporates both linear and, especially for derivatives, nonlinear effects of the risk factors on the portfolio value.

The value-at-risk measure enables the Group to apply a constant and uniform measure across all of the Group's trading businesses and products. It allows a comparison of risk in different businesses, and also provides a means of aggregating and netting positions within a portfolio to reflect correlations and offsets between different asset classes. Furthermore, it facilitates comparisons of the Group's market risk both over time and against the daily trading results.

When using value-at-risk estimates a number of considerations should be taken into account. The model is subject to known limitations, many of which manifested themselves in 2008, resulting in a high number of outliers. These include the following:

- The use of historical data may not be a good indicator of potential future events, particularly those that are extreme in nature. This 'backward-looking' limitation can cause value-at-risk to understate risk (as in 2008), but can also cause it to be overstated. In 2009 the Group observed fewer outliers than would be predicted by the model. In a strict statistical sense, the value-at-risk in 2009 was over-conservative, and had over-estimated the risk in the trading books. As discussed, the Group's value-at-risk model bases estimates of future volatility on market data observed over the previous year. For much of 2009, this estimate incorporated the extreme market volatility observed in the fourth quarter of 2008 following the bankruptcy of Lehman Brothers. As markets normalized in 2009, estimated volatility exceeded actual volatility, and fewer outliers occurred than expected.
- Assumptions concerning the distribution of changes in risk factors, and the correlation between different risk factors, may not hold true, particularly during market events that are extreme in nature. While the Group believes its assumptions are reasonable, there is no standard value-at-risk methodology to follow. Different assumptions would produce different results.
- The one day holding period does not fully capture the market risk arising during periods of illiquidity, when positions cannot be closed out or hedged within one day
- Value-at-risk does not indicate the potential loss beyond the 99th quantile
- Intra-day risk is not captured
- Although the Group considers the material risks to be covered by the Group's value-at-risk model and the Group further enhance it, there still may be risks in the trading book that are not covered by the value-at-risk model.

The Group continuously analyzes potential weaknesses of the Group's value-at-risk model using statistical techniques such as back-testing, but also rely on risk management experience and expert opinion. Back-testing provides an analysis of the predictive power of the value-at-risk calculations based on actual experience. The Group compares the hypothetical daily profits and losses under the buy-and-hold assumption (in accordance with German regulatory requirements) with the estimates from the Group's value-at-risk model.

A committee, chaired by Market Risk Management and with participation from Market Risk Operations, Risk Analytics and Instruments, and Finance and others, meets on a quarterly basis to discuss back-testing results of the Group as a whole and of individual businesses. The committee analyzes performance fluctuations and assesses the predictive power of the value-at-risk model, which in turn allows the Group to improve the risk estimation process.

The Group is committed to the ongoing development of its proprietary risk models, and allocates substantial resources to reviewing and improving them. Special attention is given to improving those parts of the value-at-risk model that relate to the areas where losses have been experienced in the recent past. During 2008 and 2009, significant methodology improvements were made to the value-at-risk calculation, including the following:

- Introduction of option-adjusted spread sensitivity for mortgage backed securities. This measure of credit spread more accurately captures prepayment risk, which arises from mortgage holders' option to prepay their mortgage if interest rates fall
- Introduction of credit spread implied volatility sensitivity
- Inclusion of basis risk between different money market instruments and swaps based on them
- Inclusion of basis risk between credit default spreads and bond spreads

Economic Capital for Market Risk

As for other risk categories, economic capital for market risk measures the amount of capital the Group needs to absorb very severe unexpected losses arising from the Group's exposures. "Very severe" in this context means that economic capital is set at a level to cover with a probability of 99.98 % the aggregated unexpected losses within one year.

Some firms calculate economic capital for market risk using their value-at-risk model, by applying a higher confidence level and longer holding period. A key limitation of this approach is that value-at-risk models are based on relatively recent historical data, and therefore typically only reflect losses under normal market conditions. To address this, the Group calculates economic capital using stress tests and scenario analyses. The stress tests are derived from historically observed severe market shocks. The resulting losses from these stress scenarios are then aggregated using correlations observed during periods of market crises, to reflect the increase in correlations which occurs during severe downturns.

The stress tests are augmented by subjective assessments where only limited historical data is available, or where market developments are viewed to make historical data a poor indicator of possible future market scenarios.

The calculation of economic capital for market risk from the trading units is performed weekly. The model incorporates the following risk factors: interest rates, credit spreads, equity prices, foreign exchange rates and commodity prices. Volatility, credit correlation and common basis risks are also captured.

During the course of 2009 the economic capital stress tests were recalibrated to reflect the extreme market moves observed in the later part of 2008. This included extension of the assumed holding periods on credit positions, and significant increases to the shocks applied to equity indices and credit spreads, especially for securitized products.

In addition to the recalibration, there were improvements to the economic capital model. These included the addition of stress tests for leveraged exchange traded funds and for gap risk in non-recourse finance in emerging markets.

The Group's stress testing results and economic capital estimations are necessarily limited by the number of stress tests executed and the fact that not all downside scenarios can be predicted and simulated. While the Group's risk managers have used their best judgment to define worst case scenarios based upon the knowledge of past extreme market moves, it is possible for the market risk positions to lose more value than even the Group's economic capital estimates. The Group also continuously assesses and refines its stress tests in an effort to ensure they capture material risks as well as reflect possible extreme market moves.

Value-at-Risk of Trading Units of the Group's Corporate and Investment Bank Group Division

The following table shows the value-at-risk (with a 99 % confidence level and a one-day holding period) of the trading units of the Group's Corporate and Investment Bank Group Division. The trading market risk outside of these units is immaterial. "Diversification effect" reflects the fact that the total value-at-risk on a given day will be lower than the sum of the values-at-risk relating to the individual risk classes. Simply adding the value-at-risk figures of the individual risk classes to arrive at an aggregate value-at-risk would imply the assumption that the losses in all risk categories occur simultaneously.

Table 31 Value-at-Risk of CIB Trading Units by Risk Type

Value-at-risk of trading units in € m.	Dec 31, 2009	Dec 31, 2008
Interest rate risk	111.0	129.9
Equity price risk	37.0	34.5
Foreign exchange risk	23.9	38.0
Commodity price risk	14.8	13.5
Diversification effect	(65.7)	(84.5)
Total	121.0	131.4

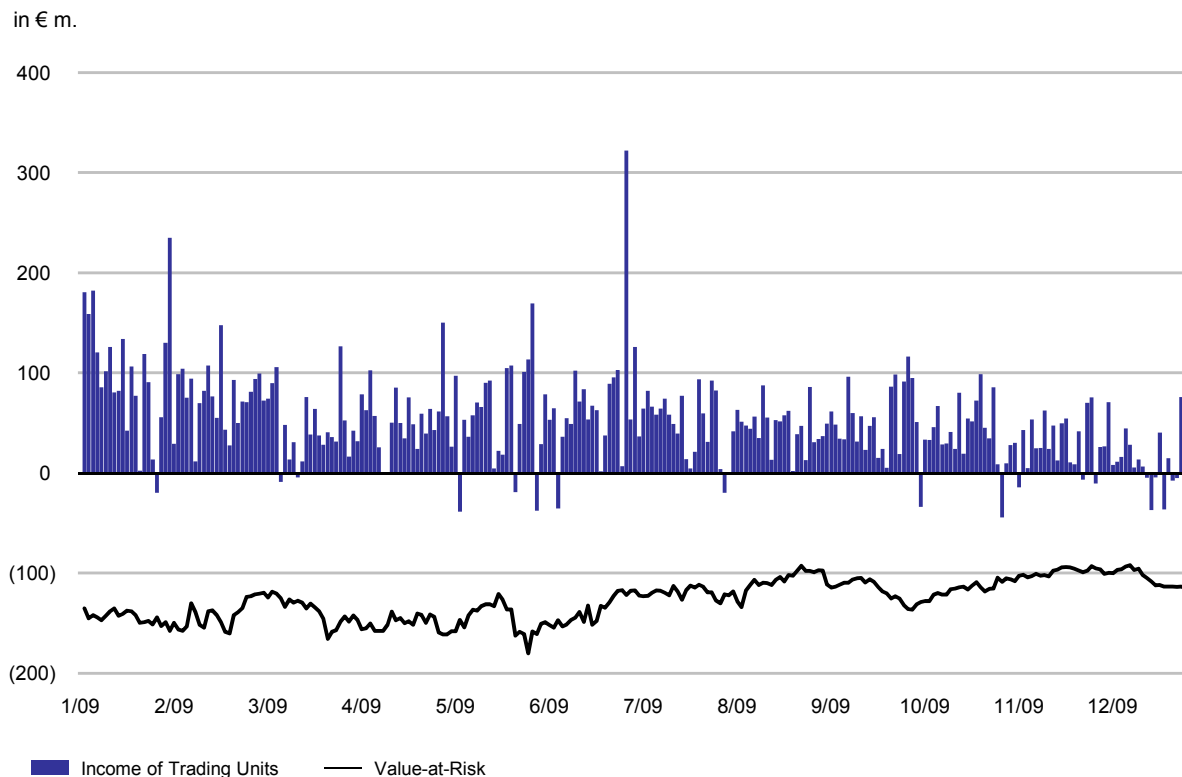
The following table shows the maximum, minimum and average value-at-risk (with a 99 % confidence level and a one-day holding period) of the trading units of the Group's Corporate and Investment Bank Group Division by risk categories for the periods specified.

Table 32 Value-at-Risk of CIB Trading Units in the Reporting Period

Value-at-risk of trading units in € m.	Total		Diversification effect		Interest rate risk		Equity price risk		Foreign exchange risk		Commodity price risk	
	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008
Average	126.8	122.0	(61.6)	(74.7)	117.6	105.4	26.9	60.7	28.7	18.4	15.1	12.2
Maximum	180.1	172.9	(112.3)	(104.1)	169.2	143.3	47.3	93.8	64.4	42.4	34.7	21.1
Minimum	91.9	97.5	(35.9)	(48.4)	83.2	83.1	14.5	31.0	11.9	8.5	8.5	7.6

The following graph shows the daily aggregate value-at-risk of the Group’s trading units in 2009, including diversification effects, and actual income of the trading units throughout the year.

Income of Trading Units and Value-at-Risk in 2009



The Group’s value-at-risk for the trading units remained within a band between € 91.9 million and € 180.1 million. The average value-at-risk in 2009 was € 126.8 million, which is 4 % above the 2008 average of € 122 million.

The increase in average value-at-risk observed in 2009 was driven primarily by an increased market volatility observed in 2008, and to a lesser extent by development to the value-at-risk model. For much of 2009, these factors offset the significant de-risking achieved in the trading book.

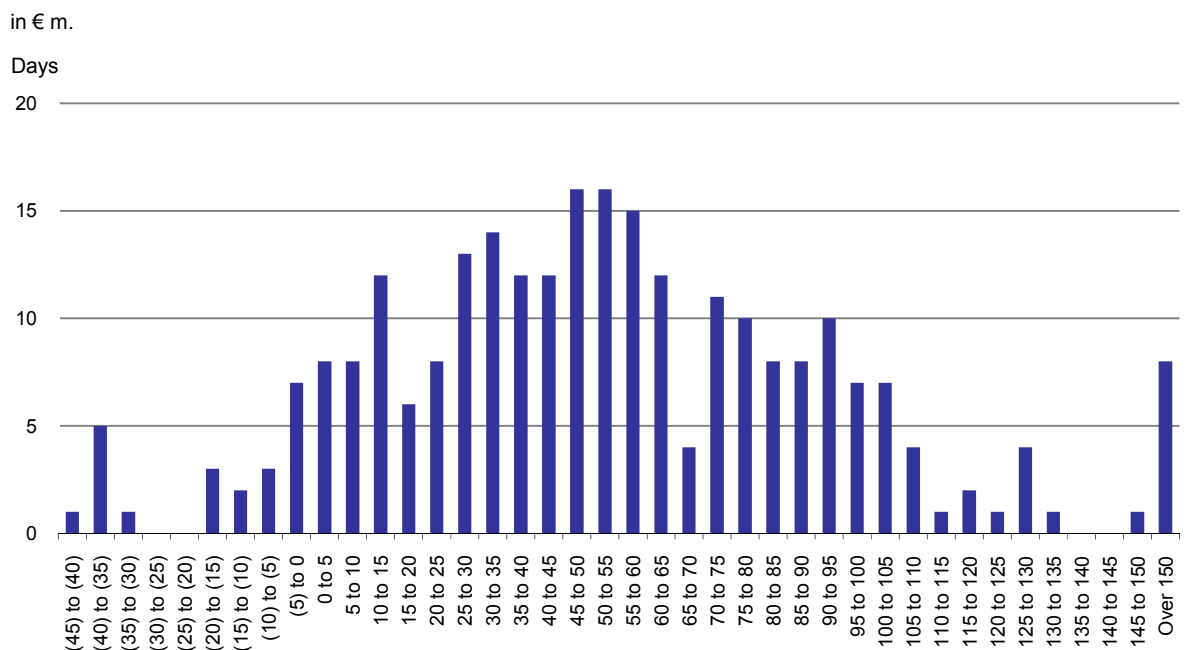
Value-at-risk peaked in the second quarter 2009 at € 180.1 million, and then fell as the high volatility observations from the second quarter 2008 were no longer included in the dataset. There was also a consistent fall in value-at-risk for much of the last quarter in 2009, as the extreme observations in the last quarter of 2008 (following the bankruptcy of Lehman Brothers) fell out of the dataset. In early December, value-at-risk reached a low point of € 91.9 million, which compared to the 2008 average of € 122 million, illustrates the significant reduction in risk. A combination of additional risk positions in interest rate and equity risk as well as a recalibration of parameters in the Group’s credit correlation business drove the value-at-risk back to € 121 million as per year-end 2009.

The Group's trading units achieved a positive actual income for over 91 % of the trading days in 2009 (over 57 % in 2008).

An outlier is a hypothetical buy-and-hold trading loss that exceeds the Group's value-at-risk estimate. In the regulatory back-testing in 2009, the Group observed one outlier compared to 35 in 2008. The Group would expect a 99 % confidence level to give rise to two to three outliers in any one year. This significant improvement in model performance reflects the developments carried out in 2008 and 2009 and the return of markets to more normal volatility and correlation patterns.

The following histogram illustrates the distribution of actual daily income of the Group's trading units in 2009. The histogram displays the number of trading days on which the Group reached each level of trading income shown on the horizontal axis in millions of euro.

Income of Trading Units in 2009



The economic capital usage for market risk arising from the trading units totaled € 4.6 billion at year-end 2009 compared with € 5.5 billion at year-end 2008. The reduction reflects the de-risking carried out in the trading books. This was partially offset by increases driven by recalibration of shocks and developments to the economic capital model.

Valuation of Market Risk Positions

A substantial percentage of the Group's financial assets and liabilities carried at fair value are based on, or derived from, observable prices or inputs. The availability of observable prices or inputs varies by product and market, and may change over time. For example, observable prices or inputs are usually available for: liquid securities; exchange traded derivatives; over the counter (OTC) derivatives transacted in liquid trading markets such as interest rate swaps, foreign exchange forward and option contracts in G7 currencies; and equity swap and option contracts on listed securities or indices. If observable prices or inputs are available, they are utilized in the determination of fair value and, as such, fair value can be determined without significant judgment. This includes instruments for which the fair value is derived from a valuation model that is standard across the industry and the inputs are directly observable. This is the case for many generic swap and option contracts.

In other markets or for certain instruments, observable prices or inputs are not available, and fair value is determined using valuation techniques appropriate for the particular instrument. For example, instruments subject to valuation techniques include: trading loans and other loans or loan commitments designated at fair value through profit or loss, under the fair value option; new, complex and long-dated OTC derivatives; transactions in immature or limited markets; distressed debt securities and loans; private equity securities and retained interests in securitizations of financial assets. The application of valuation techniques to determine fair value involves estimation and management judgment, the extent of which will vary with the degree of complexity and liquidity in the market. Valuation techniques include industry standard models based on discounted cash flow analysis, which are dependent upon estimated future cash flows and the discount rate used. For more complex products, the valuation models include more complex modeling techniques, parameters and assumptions, such as volatility, correlation, prepayment speeds, default rates and loss severity. Management judgment is required in the selection and application of the appropriate parameters, assumptions and modeling techniques. Because the objective of using a valuation technique is to establish the price at which market participants would currently transact, the valuation techniques incorporate all factors that the Group believes market participants would consider in setting a transaction price.

Valuation adjustments are an integral part of the fair value process that requires the exercise of judgment. In making appropriate valuation adjustments, the Group follows methodologies that consider factors such as bid-offer spread valuation adjustments, liquidity, and credit risk (both counterparty credit risk in relation to financial assets and the Group's own credit risk in relation to financial liabilities) which are at fair value through profit or loss.

The fair value of the Group's financial liabilities which are at fair value through profit or loss (e.g., OTC derivative liabilities and structured note liabilities designated at fair value through profit or loss) incorporates the change in the Group's own credit risk of the financial liability. For derivative liabilities the Group considers its own creditworthiness by assessing all counterparties' potential future exposure to us, taking into account any collateral held, the effect of any master netting agreements, expected loss given default and the Group's own credit risk based on historic default levels. The change in the Group's own credit risk for structured note liabilities is calculated by discounting the contractual cash flows of the instrument using the rate at which similar instruments would be issued at the measurement date. The resulting fair value is an estimate of the price at which the specific liability would be exchanged at the measurement date with another market participant.

Under IFRS, if there are significant unobservable inputs used in the valuation technique as of the trade date the financial instrument is recognized at the transaction price and any trade date profit is deferred. Management judgment is required in determining whether there exist significant unobservable inputs in the valuation technique. Once deferred the decision to subsequently recognize the trade date profit requires a careful assessment of the then current facts and circumstances supporting observability of parameters and/or risk mitigation.

The Group has established internal control procedures over the valuation process to provide assurance over the appropriateness of the fair values applied. If fair value is determined by valuation models, the assumptions and techniques within the models are independently validated by a specialist group. Price and parameter inputs, assumptions and valuation adjustments are subject to verification and review processes. If the price and parameter inputs are observable, they are verified against independent sources.

If prices and parameter inputs or assumptions are not observable, the appropriateness of fair value is subject to additional procedures to assess its reasonableness. Such procedures include performing revaluations using independently generated models, assessing the valuations against appropriate proxy instruments, performing sensitivity analysis and extrapolation techniques, and considering other benchmarks. Assessment is made as to whether the valuation techniques yield fair value estimates that are reflective of the way the market operates by calibrating the results of the valuation models against market transactions. These procedures require the application of management judgment.

Other valuation controls include review and analysis of daily profit and loss, validation of valuation through close out profit and loss and value-at-risk back-testing.

9. Nontrading Market Risk

9.1 Equity Investments in the Banking Book

Equity investments which are neither consolidated for regulatory purposes nor deducted from the Group's own funds are held as equity positions in the regulatory banking book. In the Group's consolidated balance sheet, these equity investments are either classified as "Financial assets available for sale ("AFS")" or "Equity method investments". An immaterial amount of financial assets designated at fair value through profit and loss which are equity interests is included in the banking book. These investments are not addressed in the following sections.

Accounting and Valuation Policies for Equity Investments

AFS equity instruments are initially recognized at fair value plus transaction costs that are directly attributable to the acquisition of that financial asset. Financial assets classified as AFS are carried at fair value with the changes in fair value generally reported in equity unless the asset is subject to a fair value hedge or is impaired. At each balance sheet date, management assesses whether there is objective evidence that an individual asset is impaired. Objective evidence of impairment includes a significant or prolonged decline in the fair value of the investment below cost. The amount of impairment is the difference between the acquisition cost and current fair value of the asset less any previously recognized impairment. Impairments of equity investments cannot be reversed. Increases in their fair value after impairment are recognized in equity.

Consistent with the valuation of financial instruments, fair value of equity securities is initially and subsequently determined using, where available, quoted prices in active markets or valuation techniques, where prices quoted in active markets are not available.

The Group reports investments in associates and joint ventures under the equity method of accounting. Equity method investments are initially recorded at cost, and subsequently increased (or decreased) to reflect both the Group's pro-rata share of the post-acquisition net income (or loss) and other movements included directly in the equity of the entity. Goodwill arising on the acquisition is included in the carrying value of the investment (net of any accumulated impairment loss). At each balance sheet date, the Group assesses whether there is any objective evidence that the investment in an associate or jointly controlled entity is impaired. If there is objective evidence of an impairment, an impairment test is performed by comparing the investment's recoverable amount, which is the higher of its value in use and fair value less costs to sell, with its carrying amount. Equity method losses in excess of the Group's carrying value of the investment in the entity are charged against other assets held by the Group related to the investee. If those assets are written down to zero, a determination is made whether to report additional losses based on the Group's obligation to fund such losses.

For further detail on the Group's accounting and valuation policies related to equity investments please refer to Notes [1] "Significant Accounting Policies" and [13] "Financial Instruments carried at Fair Value" in the Group's Financial Report 2009.

Equity Investments Held

The following table presents the Group's equity investments separately for AFS and equity method investments and further broken down into exchange-traded and non-exchange-traded positions based on their carrying value. A disparity between the carrying value of the investment positions and their fair value was only observable for the exchange-traded equity method investments, which had a carrying value of € 6.1 billion and a fair value of € 3.8 billion as of December 31, 2009.

Table 33 Equity Investments According to IFRS Classification

Equity investments according to IFRS classification ^{1,2} in € m.	Carrying value	
	Dec 31, 2009	Dec 31, 2008 ⁴
Financial assets available for sale equity instruments	3,078	4,982
Exchange-traded positions	690	2,799
Non-exchange-traded positions ³	2,388	2,183
Equity method investments	7,770	2,073
Exchange-traded positions	6,066	94
Non-exchange-traded positions ³	1,704	1,979
Total equity investments	10,848	7,055

1 Equity investments held by entities, which are consolidated for IFRS purposes but not consolidated for regulatory purposes, are excluded from the table. Entities holding equity investments which are considered for regulatory purposes but not consolidated according to IFRS, do not provide IFRS balance sheet and profit or loss information. Hence these equity investments are also excluded. The regulatory exposure value ("EAD") of these equity investments amounted to € 54 million as of December 31, 2009 and € 385 million as of December 31, 2008.

2 Other positions like equity underlyings resulting from derivative transactions or certain subordinated bonds which are also assigned to the exposure class "Equity in the banking book" are excluded from the table. Their EAD amounted to € 1.2 billion as of December 31, 2009 and € 437 million as of December 31, 2008.

3 The "Non-exchange-traded positions" combine the two equity classes "Non-exchange-traded, but belonging to an adequately diversified equity portfolio" and "Other equity positions" according to Section 78 SolV.

4 Prior year information adjusted for a switch from equity method investments to available for sale investments.

In addition to the above, the Group's regulatory requirements consider € 4.7 billion EAD as of December 31, 2009 and € 4.2 billion EAD as of December 31, 2008 in respect of equity investments which are Group-internal from an IFRS perspective.

The observed decrease in the carrying value for exchange traded available for sale equity instruments as of December 31, 2009 compared to December 31, 2008, results from the sale of industrial holdings (mainly related to Daimler AG and Linde AG).

As of December 31, 2009, the most significant equity investment held in the banking book was the stake in Deutsche Postbank AG, Bonn, representing approximately 75 % of the carrying value of equity method investments in the Group's financial statements according to IFRS. Also, the difference between carrying value and fair value of equity method investments is mainly related to this investment. For further details on the accounting of the Postbank transaction, please refer to Note [16] "Equity Method Investments" in the Group's Financial Report 2009.

The table below summarizes the realized and unrealized gains and losses resulting from equity investments. For AFS – equity investments, the components considered are realized gains and losses from sales and liquidations as well as unrealized revaluation gains and losses and impairments. For equity method investments, the gain and loss elements consist of realized gains and losses from sales and liquidations, pro-rata share of net income (loss), impairments and unrealized revaluation gains (losses) in form of the differences between carrying amounts and fair values. In this respect, the realized gains (losses) on disposals, the impairments and the pro-rata share of net income (loss) are referring to the reporting period 2009 and 2008 whereas the unrealized revaluation gains (losses) as well as the difference between the carrying values and the fair values for the at equity investments represent the amounts as of December 31, 2009 and December 31, 2008.

Table 34 Realized Gains (Losses) in the Reporting Period and Unrealized Gains (Losses) at Year-end from Equity Investments

Realized and unrealized gains (losses) from equity investments^{1,2}		
in € m.	2009	2008
Gains and losses on disposal	464	1,624
Impairments	(979)	(368)
Pro-rata share of net income (loss)	189	53
Total realized gains (losses) from equity investments	(326)	1,309
	Dec 31, 2009	Dec 31, 2008
Unrealized revaluation gains (losses) ³	616	63
Difference between carrying value and fair value	(2,272)	(7)
Total unrealized gains (losses) from equity investments	(1,656)	56

- Equity investments held by entities, which are consolidated for IFRS purposes but not consolidated for regulatory purposes, are excluded from the table. Entities holding equity investments which are considered for regulatory purposes but not consolidated according to IFRS, do not provide IFRS balance sheet and profit or loss information. Hence these equity investments are also excluded. The regulatory exposure value ("EAD") of these equity investments amounted to € 54 million as of December 31, 2009 and € 385 million as of December 31, 2008.
- Other positions like equity underlyings resulting from derivative transactions or certain subordinated bonds which are also assigned to the exposure class "Equity in the banking book" are excluded from the table. Their EAD amounted to € 1.2 billion as of December 31, 2009 and € 437 million as of December 31, 2008.
- These are revaluation gains (losses) related to equity investments. Overall the unrealized gains (losses) on listed securities as to be determined for regulatory purposes were € 736 million as of December 31, 2009, 45 % of which were included in Tier 2 capital, and € (108) million as of December 31, 2008, which were fully deducted from Tier 1 capital.

The Group holds equity investments with the intent to realize profits by taking advantage of market opportunities as well as for strategic reasons. Only a smaller part of the investments are intended to support a specific business strategy of a business division as part of a complex customer transaction.

From a management point of view, the following group divisions assume responsibility for equity investments the Group entered into:

- **The Corporate Investments Group Division ("CI")** manages the Group's global principal investment activities. The principal investment activities include the Group's industrial holdings, certain private equity and venture capital investments, private equity fund investments, certain corporate real estate investments, the Group's minority stake in Deutsche Postbank AG, credit exposures and certain other non-strategic investments. Historically, its mission has been to provide financial, strategic, operational and managerial capital to enhance

the values of the portfolio of companies in which the group division has invested. The Group believes that CI enhances the Group's portfolio management and risk management capability.

- The group divisions [Corporate and Investment Bank](#) and [Private Clients and Asset Management](#) mainly hold investments in the banks alternative asset portfolio for profit realization as well as for strategic reasons.

9.2 Interest Rate Risk in the Banking Book

Assessment of Market Risk in Nontrading Portfolios – Interest Rate Risk

With the exception of some entities in the Private and Business Clients corporate division in Germany, the Private Wealth Management mortgage business in the U.S., and financing structures of strategic acquisitions in Corporate Investments the Group's interest rate risk arising from nontrading asset and liability positions has been transferred through internal transactions to the Global Markets Business division within the Corporate and Investment Bank group division, and is managed on the basis of value-at-risk, as reflected in trading value-at-risk numbers. The treatment of interest rate risk in the Group's trading portfolios and the application of the value-at-risk model are discussed in chapter 8 "Trading Market Risk".

The Group's Private and Business Clients corporate division, a nontrading division, and the business division Private Wealth Management manage interest rate risk for the above mentioned entities separately through dedicated Asset and Liability Management departments. The measurement of the interest rate risk by Asset and Liability Management Private and Business Clients is performed daily and for Private Wealth Management weekly. Interest Rate Risk from strategic acquisition financing structures within the Corporate Investment division is monitored quarterly.

The nature of interest rate risks in the banking book stems from residual asset/liability mismatches. The changes of present values of the banking book positions when applying parallel yield curve shifts of –190 and +130 basis points are below 1 % of the Group's total regulatory capital. Consequently, interest rate risk in the banking book is considered immaterial.

Measuring interest rate risks in the banking book is based upon key assumptions regarding client behaviour, future availability of deposit balances and sensitivities of deposit rates versus market interest rates resulting in a longer than contractual effective duration. Those assumptions are being stressed within the Group's economic capital framework. Further assumptions are being made regarding early pre-payment behaviour for loan products. The assumptions are based on historical observations, statistical analyses and expert assessments. If the future evolution of balances, rates or client behaviour differ from these assumptions, then this could have an impact on the Group's interest rate risks in the banking book.

9.3 Nontrading Market Risk Management

The market risk component of the Group's nontrading activities is overseen by dedicated Nontrading Market Risk Management units. These teams assume responsibility in particular for the management of equity and interest rate risk in the banking book which is described in more detail in chapter 9.1 and 9.2. above.

A further area of focus is the structural foreign exchange risk exposure – a significant contribution to the Group's foreign exchange risk in its nontrading portfolio – resulting from unhedged capital and retained earnings in non-€ currencies in certain subsidiaries, mainly U.S. and UK entities.

Apart from these more conventional risk topics, the Group's Nontrading Market Risk Management function also has the mandate to monitor and manage risks arising from equity compensation and asset management and fund related activities resulting primarily from guaranteed funds. Moreover, the Group's PBC, GTB and PWM businesses are subject to modeling risk with regard to client deposits. This risk materializes if assumptions on client behavior are shocked in combination with interest rate movements.

The Capital and Risk Committee supervises the Group's nontrading market risk exposures. Investment proposals for strategic investments are analyzed by the Group Investment Committee. Depending on size of the strategic investment the investment requires approval from the Group Investment Committee, the Management Board or even the Supervisory Board. The development of Strategic Investments is monitored by the Group Investment Committee on a regular basis. Multiple members of the Capital and Risk Committee are also members of the Group Investment Committee, ensuring a close link between both committees.

Due to the complexity and variety of risk characteristics in the area of nontrading market risks, the responsibility of risk management is split into three teams:

- The Nontrading Market Risk Management team within the Group's Market Risk Management function covers market risks in PBC, GTB, PWM and Corporate Investments as well as Structural FX Risks, Equity Compensation Risks and Pension Risks.
- The Principal Investments team within the Group's Credit Risk Management function is specialized in risk-related aspects of its nontrading alternative asset activities and performs monthly reviews of the risk profile of the nontrading alternative asset portfolios.
- The Asset Management Risk unit within the Group's Credit Risk Management function is specialized in risk-related aspects of its asset and fund management business. Noteworthy risks in this area arise, for example, from performance and/or principal guarantees and reputational risk related to managing client funds.

Assessment of Market Risk in the Group's Nontrading Portfolios

Due to the nature of these positions as well as the static nature of some of the pricing the Group does not use value-at-risk to assess the market risk in its nontrading portfolios. Rather the Group assesses the risk through the use of stress testing procedures that are particular to each risk class and which consider, among other factors, large historically-observed market moves and the liquidity of each asset class as well as changes in client behaviors in relation to deposit products. In this context, the Group also utilizes its macroeconomic credit portfolio model to estimate the economic capital demand for its strategic investments. This assessment forms the basis of the Group's economic capital estimates which enables the Group to actively monitor and manage its nontrading market risk. As of year-end 2009 several enhancements to the economic capital coverage across the nontrading market risk portfolio have been introduced. Most significant additions to the economic capital coverage are Equity Compensation Risks, Structural FX risks and modeling risks with regard to the Group's client deposits in its PBC, GTB and PWM businesses. Although these positions have a large economic capital impact on a stand-alone basis, they have only small impact on a diversified basis.

Table 35 Economic Capital Usage for the Group's Nontrading Market Risk Portfolios per Business Area

The table below shows the economic capital usages for the Group's nontrading portfolios by business division.

Economic capital usage for the Group's nontrading portfolios		
in € m	Dec 31, 2009	Dec 31, 2008
CIB	890	941
PCAM	2,246	1,730
Corporate Investments	5,043	577
Other nontrading market risk	(277)	14
Total DB Group	7,902	3,262

Most significant changes in 2009 result from the acquisition of shares in Deutsche Postbank AG, which is the main driver of the economic capital increase within Corporate Investments. The increase in PCAM is mainly driven by further enhancements to the economic capital model in Private & Business Clients and Asset and Wealth Management. The allocation of the economic capital contribution for deposit modeling amounting to € 15 million as of December 31, 2008 was shifted from business risk economic capital to nontrading market risk economic capital as of December 31, 2009.

**Table 36 Carrying Value and Economic Capital Usage
for the Group's Nontrading Market Risk Portfolios**

The table below shows the carrying values and economic capital usages separately for the Group's nontrading portfolios.

Nontrading portfolios in € bn.	Carrying value		Economic capital usage	
	Dec 31, 2009	Dec 31, 2008	Dec 31, 2009	Dec 31, 2008
Strategic Investments	7.6	1.2	4.9	0.8
Major Industrial Holdings ¹	0.2	1.1	–	0.4
Other Corporate Investments	0.9	0.9	0.2	0.2
Alternative Assets	3.8	3.2	1.3	1.3
Principal Investments	2.0	1.6	0.7	0.7
Real Estate	1.7	1.3	0.6	0.6
Hedge Funds ²	0.1	0.2	–	–
Other non-trading market risks ³	N/A	N/A	1.5	0.6
Total	12.5	6.3	7.9	3.3

1 There is a small economic capital usage of € 28 million as of December 31, 2009.

2 There is a small economic capital usage of € 17 million as of December 31, 2009 and € 42 million as of December 31, 2008.

3 N/A indicates that the risk is mostly related to off-balance sheet and liability items.

The Group's economic capital usage for these nontrading market risk portfolios totaled € 7.9 billion at year-end 2009, which is € 4.6 billion, or 142 %, above the economic capital usage at year-end 2008.

- **Strategic Investments.** The Group's economic capital usage of € 4.9 billion at December 31, 2009 was mainly driven by its participations in Deutsche Postbank AG and Hua Xia Bank Company Limited.
- **Major Industrial Holdings.** The Group's economic capital usage was € 28 million at December 31, 2009. Most of these Major Industrial Holdings have been divested during 2009, most notably the majority of the Group's share-holdings in Daimler AG. The remaining positions are no longer substantial to the Group.
- **Other Corporate Investments.** The Group's economic capital usage was € 203 million for its other corporate investments at year-end 2009.
- **Alternative assets.** The Group's alternative assets include principal investments, real estate investments (including mezzanine debt) and small investments in hedge funds. Principal investments are composed of direct investments in private equity, mezzanine debt, short-term investments in financial sponsor leveraged buy-out funds, bridge capital to leveraged buy-out funds and private equity led transactions. The alternative assets portfolio has some concentration in infrastructure and real estate assets. While recent market conditions have limited the opportunities to sell down the portfolio, the Group's intention remains to do so, provided suitable conditions allow it.

— Other nontrading market risks:

- **Deposit bucketing.** Economic capital derived from stressing modeling assumptions for the effective duration of overnight deposits. The Group's economic capital usage was € 247 million at December 31, 2009 and was mainly driven by PBC with a contribution of € 228 million.
- **Equity compensation.** Risk arising from structural short position in the Group's own share price arising from restricted equity units. The Group's economic capital usage was € (597) million at December 31, 2009 on a diversified basis. The negative contribution to the Group's diversified economic capital is derived from the fact that a reduction of its share price in a downside scenario as expressed by economic capital would lead to reduced negative impact on the Group's capital position from the equity compensation liabilities.
- **Structural foreign exchange risk.** The Group's foreign exchange exposure arising from unhedged capital and retained earnings in non-€ currencies in certain subsidiaries. The Group's economic capital usage was € 307 million at December 31, 2009 on a diversified basis.
- **Asset Management.** Guaranteed Funds: The Group's economic capital usage was € 1.3 billion at December 31, 2009, an increase of 139% over its economic capital usage at year-end 2008, driven by a recalibration of economic capital calculation parameters (shocks, correlations) in July 2009 reflecting changed market conditions.

The Group's total economic capital figures does not currently take into account diversification benefits between the asset categories except for those of equity compensation and structural FX risks.

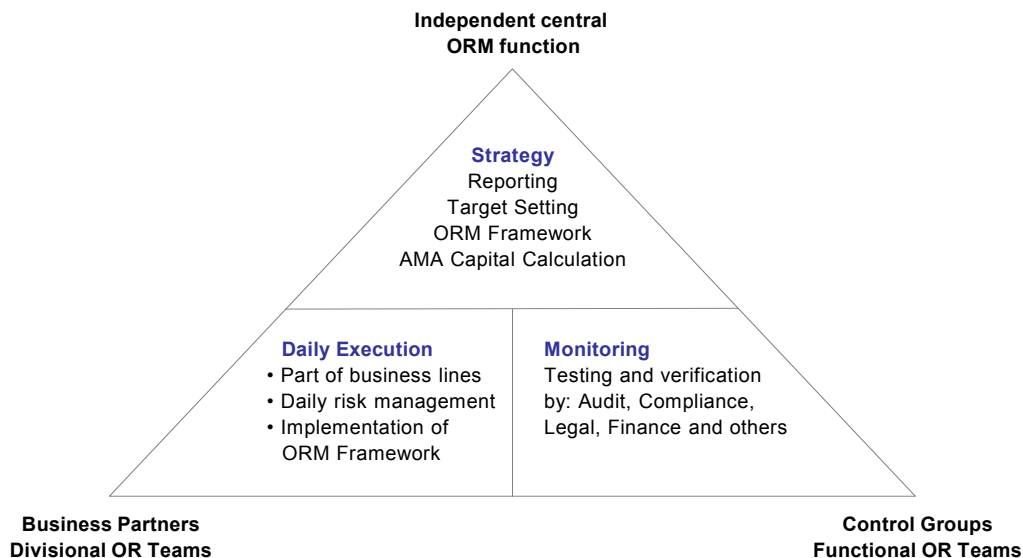
10. Operational Risk

Organizational Structure

The Global Head of Operational Risk Management is a member of the Risk Executive Committee and reports to the Chief Risk Officer. He chairs the Operational Risk Management Committee, which is a permanent sub-committee of the Risk Executive Committee and is composed of the Operational Risk Officers from the Group’s Business Divisions and Infrastructure Functions. It is the main decision-making committee for all operational risk management matters.

While the day-to-day operational risk management lies with the Group’s business divisions and infrastructure functions, the Operational Risk Management function manages the cross divisional and cross regional operational risk and ensures a consistent application of the Group’s operational risk management strategy across the bank. Based on this Business Partnership Model, which is also shown in the chart below, the Group ensures close monitoring and high awareness of operational risk.

Business Partnership Model of Operational Risk Management



Managing The Group's Operational Risk

The Group manages operational risk based on a Group-wide consistent framework that enables the Group to determine the operational risk profile in comparison to the Group's risk appetite and systematically identify operational risks themes to define risk mitigating measures and priorities.

The Group applies a number of techniques to efficiently manage the operational risk in its business, for example:

- The Group performs systematic risk analyses, root cause analyses and lessons learned activities for events above € 2 million to identify inherent areas of risk and to define appropriate risk mitigating actions which are monitored for resolution. The prerequisite for these detailed analyses and the timely information of the Group's senior management on the development of the operational risk events and on single larger events is the continuous collection of all losses above € 10.000 arising from operational risk events in the Group's "db-Incident Reporting System".
- The Group systematically utilizes information on external events occurring in the banking industry to ensure that similar incidents will not happen to the Group.
- Key Risk Indicators ("KRI") are used to alert the organization to impending problems in a timely fashion. They allow the monitoring of the Group's control culture as well as the operational risk profile and trigger risk mitigating actions. Within the KRI program the Group captures data at a granular level allowing for business environment monitoring and facilitating the forward looking management of operational risk based on early warning signals returned by the KRIs. The Group captures and monitors key operational risk indicators in the tool "db-Score".
- In the Group's bottom-up Risk and Control Self Assessment ("RCSA") process, which is conducted at least annually, areas with high risk potential are highlighted and risk mitigating measures to resolve issue are identified. In general, RCSAs are performed in the Group's tool "db-SAT". On a regular basis the Group conducts country risk workshop aiming to evaluate risks specific to countries and local legal entities the Group is operating in and take appropriate risk mitigating actions.
- Regular operational risk profile reports for the Group's business divisions, the countries the Group is operating in and selected infrastructure groups are reviewed and discussed with the department's senior management. The regular performance of the risk profile reviews enables the Group to early detect changes to the units risk profile and to take corrective actions.
- Within the Group's tracking tool "db-Track" the Group monitors risk mitigating measures identified via these techniques for resolution.
- Due to the heterogeneous nature of operational risks in certain cases operational risks cannot be fully mitigated. In such cases operational risks are mitigated following the "as low as reasonable possible" principle and the residual risk is formally accepted.
- The Group performs top risk analyses in which the results of the aforementioned activities are considered. The top risk analyses mainly contribute into the annual operational risk management strategy and planning process. Besides the operational risk management strategic and tactical planning the Group defines capital and expected loss targets which are monitored on a regular basis within the quarterly forecasting process.

Table 37 Measuring the Group's Operational Risks

Economic capital usage (for operational risk)		
in € m.	Dec 31, 2009	Dec 31, 2008
CIB	2,822	3,324
PCAM	654	803
CI	17	20
Total	3,493	4,147

The Group's economic capital for operational risk as of December 31, 2009 was € 3.5 billion, a 16% reduction from € 4.1 billion reported for the end of 2008. The reduction is principally driven by

- € 200 million additional insurances for professional indemnity tail risk in the investment banking area.
- New monitoring and control mechanisms enables the Group to identify earlier where staff is non-compliant with a number of established direct and indirect fraud prevention measurements.
- Positive development of the Key Risk Indicators utilized in the Qualitative Adjustment combined with an increased sensitivity of the Group's Advanced Measurement Approach (AMA) capital model to recent business environment developments.

The Group calculates and measures the economic and regulatory capital for operational risk using the internal AMA methodology. Economic capital is derived from the 99.98 % quantile and allocated to the businesses and used in performance measurement and resource allocation, providing an incentive to manage operational risk, optimizing economic capital utilization. The regulatory capital operational risk applies the 99.9 % quantile and is calculated globally across all businesses.

The Group's internal AMA capital calculation is based upon the loss distribution approach. Net losses (gross losses adjusted for direct recoveries) from historical internal and external loss data (Operational Riskdata eXchange Association (ORX) consortium data and a public database), plus scenario data are used to estimate the risk profile (that is, a loss frequency and a loss severity distribution). Thereafter, frequency and severity distribution are combined in a Monte Carlo simulation to generate losses over a one year time horizon. Finally, the risk mitigating benefits of insurance are applied to each loss generated in the Monte Carlo simulation. Correlation/diversification benefits are applied to the net losses – in a manner compatible with regulatory requirements – to arrive at a net loss distribution at the Group level covering expected and unexpected losses. Capital is then allocated to each of the business divisions and both the qualitative adjustment ("QA") and expected losses deduction are made.

The QA reflects the effectiveness and performance of the day-to-day operational risk management activities via KRIs and RCSAs focusing on the business environment and internal control factors. QA is applied as a percentage adjustment to the final capital number. This approach makes qualitative adjustment transparent to the management of the businesses and provides feedback on their risk profile as well as on the success of their management of operational risk. It thus provides incentives for the businesses to continuously improve Operational Risk Management in their areas.

The expected loss for operational risk is based on historical loss experience and expert judgment considering business changes denoting the expected cost of operational losses for doing business. To the extent it is considered in the divisional business plans it is deducted from the AMA capital figure.

The unexpected losses for the business divisions (after QA and expected loss) are aggregated to produce the Group AMA capital figure.

Since 2008 the Group has maintained approval by the BaFin to use the AMA.

The Group's Operational Risk Management Stress Testing Concept

Within its Stress Testing concept the Group ensures that operational risks are sufficiently and adequately stressed. The Group's AMA methodology already incorporates stress testing elements such as external data containing extreme data points and an over 25 year loss history both used to model the severity distribution. Additionally the Group performs complementary sensitivity and firm wide stress tests. The Group also participates in stress tests initiated by the banking supervision, e.g., EU-wide stress test from the Committee of European Banking Supervisors, which resulted in only a minimal capital impact.

Role of Corporate Insurance/Deukona

The definition of the Group's insurance strategy and supporting insurance policy and guidelines is the responsibility of its specialized unit Corporate Insurance/Deukona ("CI/D"). CI/D is responsible for the Group's global corporate insurance policy which is approved by the Group's Management Board.

Within the Group, CI/D is responsible for acquiring insurance coverage and for negotiating contract terms and premiums. CI/D also has a role in the allocation of insurance premiums to the businesses. CI/D specialists assist in devising the method for reflecting insurance in the capital calculations and in arriving at parameters to reflect the regulatory requirements. CI/D is actively involved in industry efforts to reflect the effect of insurance in the results of the capital calculations.

The Group buys insurance in order to protect itself against unexpected and substantial unforeseeable losses. The identification, definition of magnitude and estimation procedures used are based on the recognized insurance terms of "common sense", "state-of-the-art" and/or "benchmarking". The maximum limit per insured risk takes into account the reliability of the insurer and a cost/benefit ratio, especially in cases in which the insurance market tries to reduce coverage by restricted/limited policy wordings and specific exclusions.

The Group maintains a number of captive insurance companies, both primary and re-insurance companies. However, insurance contracts provided are only considered in the modeling/calculation of insurance-related reductions of operational risk capital requirements where the risk is re-insured in the external insurance market. Other insurance contracts from captive companies will only be considered if and when they have been explicitly approved by the BaFin in compliance with the relevant Solvency Regulations requirements.

CI/D selects insurance partners in strict compliance with the regulatory requirements specified in the Solvency Regulations and the "Operational Risks Experts Group recommendation on the recognition of insurance in advanced measurement approaches". The insurance portfolio, as well as CI/D activities, are audited by Group Audit on a periodic basis.

11. Liquidity Risk

Liquidity risk management safeguards the Group's ability to meet all payment obligations when they come due. The Group's liquidity risk management framework has been an important factor in maintaining adequate liquidity and in managing the funding profile during 2009.

Liquidity Risk Management Framework

The Group's Treasury function is responsible for the management of liquidity risk. The Group's liquidity risk management framework is designed to identify, measure and manage the liquidity risk position of the Group. The underlying policy, including the Group's risk tolerance, is reviewed and approved regularly by the Management Board. The policy defines the liquidity risk limits which are applied to the Group.

The Group's liquidity risk management approach starts at the intraday level (operational liquidity) managing the daily payments queue, forecasting cash flows and factoring in the Group's access to Central Banks. It then covers tactical liquidity risk management dealing with the access to secured and unsecured funding sources. Finally, the strategic perspective comprises the maturity profile of all assets and liabilities (Funding Matrix) on the balance sheet and issuance strategy.

The Group's cash-flow based reporting system provides daily liquidity risk information to global and regional management.

Stress testing and scenario analysis plays a central role in the liquidity risk management framework. This also incorporates an assessment of asset liquidity, i.e. the characteristics of the asset inventory, under various stress scenarios.

Short-term Liquidity and Wholesale Funding

The Group's reporting system tracks cash flows on a daily basis over an 18-month horizon. This system allows management to assess the Group's short-term liquidity position in each location, region and globally on a by-currency, by-product and by-division basis. The system captures all of the Group's cash flows from transactions on its balance sheet, as well as liquidity risks resulting from off-balance sheet transactions. The Group models products that have no specific contractual maturities using statistical methods to reflect the behavioral characteristics of their cash flows. Liquidity outflow limits (Maximum Cash Outflow Limits), which have been set to limit cumulative global and local cash outflows, are monitored on a daily basis to safeguard the Group's access to liquidity.

As of year-end 2009 the Group has implemented a new reporting system which focuses on contractual cash flows from wholesale funding sources on a daily basis over a 12-month horizon. The system captures all cash flows from unsecured as well as from secured funding transactions. Wholesale funding limits, which are calibrated against the Group's stress testing results and approved by the Management Board describes the Group's maximum tolerance for liquidity risk. These limits apply to the cumulative global cash outflows and are monitored on a daily basis.

Unsecured Funding

Unsecured funding is a finite resource. Total unsecured funding represents the amount of external liabilities which the Group takes from the market irrespective of instrument, currency or tenor. Unsecured funding is measured on a regional basis by currency and aggregated to a global utilization report. The management board approves limits to protect the Group’s access to unsecured funding at attractive levels.

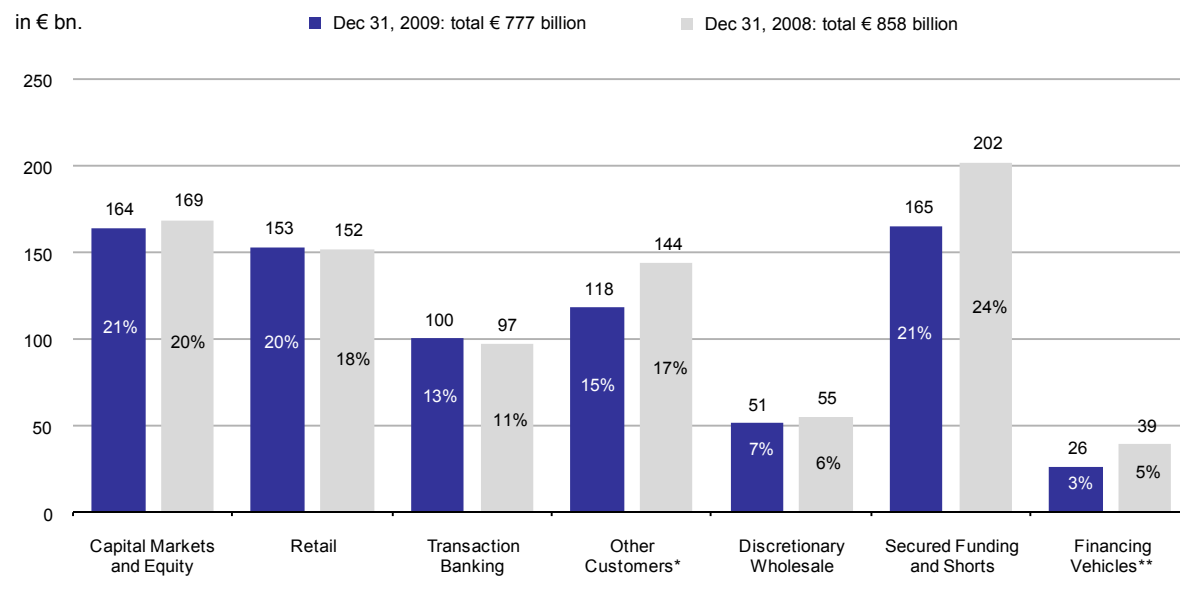
Funding Diversification

Diversification of the Group’s funding profile in terms of investor types, regions, products and instruments is an important element of the liquidity risk management framework. The Group’s core funding resources come from retail clients, long-term capital markets investors and transaction banking clients. Other customer deposits and borrowing from other banks are additional sources of funding. The Group uses interbank deposits primarily to fund liquid assets.

In 2009 the Group continued to focus on increasing its stable core funding components and on reducing the short-term discretionary wholesale funding.

The following chart shows the composition of the Group’s external funding sources that contribute to the liquidity risk position as of December 31, 2009 and December 31, 2008, both in euro billion and as a percentage of the total external funding sources. Compared to the 2008 version of the below chart, the Group has added funding sources such as secured funding and financing vehicles, in order to further increase the transparency on the Group’s overall funding mix.

Composition of external funding sources



* Other includes fiduciary, self-funding structures (e.g., X-markets), margin/Prime Brokerage cash balances (shown on a net basis).
 ** Includes ABCP conduits.

Funding Matrix

The Group maps all funding-relevant assets and all liabilities into time buckets corresponding to their maturities to compile a maturity profile (funding matrix). Given that trading assets are typically more liquid than their contractual maturities suggest, the Group determines individual liquidity profiles reflecting their relative liquidity value. The Group takes assets and liabilities from the retail bank that shows a behavior of being renewed or prolonged regardless of capital market conditions (mortgage loans and retail deposits) and assigns them to time buckets reflecting the expected prolongation. Wholesale banking products are included with their contractual maturities.

The funding matrix identifies the excess or shortfall of assets over liabilities in each time bucket, facilitating management of open liquidity exposures. The funding matrix is a key input parameter for the Group's annual capital market issuance plan, which, upon approval by the Capital and Risk Committee, establishes issuing targets for securities by tenor, volume and instrument. As per the year-end 2009, the Group was long funded in each of the annual time buckets of the funding matrix (2-10 years).

In 2009, Treasury issued capital market instruments with a total value of approximately € 19.9 billion, € 3.9 billion more than the original issuance plan.

For information regarding the maturity profile of the Group's long-term debt, please refer to Note [29] "Long-Term Debt and Trust Preferred Securities" of the consolidated financial statements.

Stress Testing and Scenario Analysis

The Group uses stress testing and scenario analysis to evaluate the impact of sudden stress events on its liquidity position. The scenarios have been based on historic events, such as the 1987 stock market crash, the 1990 U.S. liquidity crunch and the September 2001 terrorist attacks, liquidity crisis case studies and hypothetical events. Also incorporated are new liquidity risk drivers revealed by the latest financial markets crisis: prolonged term money-market freeze, collateral repudiation, limited fungibility of currencies, stranded syndications, systemic knock-on effects and further liquidity risk drivers such as intraday liquidity risk. As of year-end 2009 the Group also has introduced a scenario, which combines a systemic market shock with a multi notch rating downgrade.

Under each of these scenarios the Group assumes that all maturing loans to customers will need to be rolled over and require funding whereas rollover of liabilities will be partially impaired resulting in a funding gap. The Group then models the steps the Group would take to counterbalance the resulting net shortfall in funding. Countermeasures would include the Group's long cash balance and unencumbered asset inventory as well as the Group's Strategic Liquidity Reserve.

The asset liquidity analysis thereby forms an integral piece of stress testing and tracks the volume and booking location within the consolidated inventory of unencumbered, liquid assets which the Group can use to raise liquidity via secured funding transactions. Securities inventories include a wide variety of different securities. As a first step, the Group segregates illiquid and liquid securities in each inventory. Subsequently the Group assigns liquidity values to different classes of liquid securities. The liquidity of these assets is an important element in protecting the Group against short-term liquidity squeezes.

In addition, the Group keeps a dedicated strategic liquidity reserve containing highly liquid and central bank eligible securities in major currencies around the world to support the Group's liquidity profile in case of potential deteriorating market conditions. The strategic liquidity reserve amounts to € 54.9 billion as of December 31, 2009. This reserve is held in addition to the Group's cash balance and the collateral the Group needs to support its clearing activities in euro, U.S. dollars and other currencies which are held in separate portfolios around the globe.

Stress testing is fully integrated in the Group's liquidity risk management framework. The Group tracks contractual cash flows per currency and product over an eight-week horizon (which the Group considers the most critical time span in a liquidity crisis) and applies the relevant stress case to all potential risk drivers from on balance sheet and off balance sheet products. Beyond the eight week time horizon the Group analyzes on a quarterly basis the impact of a change of business model out to 12 months. The liquidity stress testing provides the basis for the Group's contingency funding plans which are approved by the Management Board.

The Group's stress testing analysis assesses the ability to generate sufficient liquidity under critical conditions and has been a valuable input when defining the target liquidity risk position. The analysis is performed monthly. The following table shows stress testing results as of December 31, 2009. For each scenario, the table shows what the Group's cumulative funding gap would be over an eight-week horizon after occurrence of the triggering event and how much counterbalancing liquidity the Group could generate.

Table 38 Stress Testing Liquidity Risk

Scenario	Funding gap ¹ in € bn.	Gap closure ² in € bn.	Liquidity impact ³
Systemic market risk	45	112	Improves over time
Emerging markets	14	116	Improves over time
Event shock	17	95	Temporary disruption
Operational risk (DB specific)	15	120	Temporary disruption
1 notch downgrade (DB specific)	34	119	Permanent
Downgrade to A-2/P-2 (DB specific)	106	118	Permanent
Combined ⁴	108	116	Permanent

1 Funding gap caused by impaired rollover of liabilities and other expected outflows.

2 Based on liquidity generation through counterbalancing and asset liquidity opportunities.

3 The Group analyzes whether the risk to its liquidity would be temporary or longer-term in nature.

4 Combined impact of systemic market risk and downgrade to A-2/P-2

With the increasing importance of liquidity management in the financial industry, the Group considers it important to confer with central banks, supervisors, rating agencies and market participants on liquidity risk-related topics. The Group participates in a number of working groups regarding liquidity and participates in efforts to create industry-wide standards that are appropriate to evaluate and manage liquidity risk at financial institutions.

In addition to the Group's internal liquidity management systems, the liquidity exposure of German banks is regulated by the Banking Act and regulations issued by the BaFin. The Group is in compliance with all applicable liquidity regulations.

Glossary

Advanced Measurement

Approach (AMA)

An operational risk measurement technique proposed under Basel II capital adequacy rules using an internal modeling methodology as a basis.

Active Book Equity (ABE)

Active Book Equity is calculated by the Group in order to make it easier to compare itself with competitors as well as in order to refer to active book equity for several ratios. The shareholders' equity is adjusted for unrealized net gains on assets available for sale, fair value adjustments on cash flow hedges (both components net of applicable taxes), as well as dividends, for which a proposal is accrued on a quarterly basis and for which payments occur once a year following the approval by the Annual General Meeting.

Alternative Assets

A portfolio of assets including principal investments, real estate investments (including mezzanine debt) and small investments in hedge funds. Principal investments are composed of direct investments in private equity, mezzanine debt, short-term investments in financial sponsor leveraged buy-out funds, bridge capital to leveraged buy-out funds and private equity led transactions.

Average Expected Exposure (AEE)

One year time average of the average simulated positive future market values for a given portfolio of derivatives and/or securities financing transactions. This exposure measure follows internal credit line netting rules and credit risk mitigation via margining and collateralization and is used as exposure measure within the calculation of economic capital.

Back testing

A procedure used to verify the predictive power of the \rightarrow value-at-risk calculations involving the comparison of hypothetical daily profits and losses under the buy-and-hold assumption with the estimates from the value-at-risk model.

Basel II

Revised recommendations for international capital adequacy standards adopted by the Basel Committee on Banking Supervision, widely referred to as Basel II capital framework, which align capital requirements more closely with the underlying risks.

Business Risk

Risk that arises from potential changes in general business conditions, such as market environment, client behavior and technological progress, which can affect the Group's earnings if the Group is unable to adjust quickly to them.

Collateral Support Annexes (CSA)

Annexes to master \rightarrow netting agreements that are used for documenting collateral arrangements between parties trading OTC (over-the-counter) derivatives. CSA's provide derivatives-related credit risk mitigation through periodic margining of the covered exposure.

Confidence Level

In the framework of \rightarrow value-at-risk and economic capital the level of probability that the actual loss will not exceed the potential loss estimated by the value-at-risk or economic capital number.

Country Risk

The risk that the Group may suffer a loss, in any given country, due to deterioration in economic conditions, political and social unrest, nationalization and expropriation of assets, government repudiation of external indebtedness, exchange controls and currency depreciation or devaluation.

Credit Conversion Factor (CCF)

A multiplier that is used to convert off-balance-sheet items into credit exposure equivalents. Within the advanced IRBA the Group applies specific CCFs in order to calculate an \rightarrow Exposure at Default (EAD) value. In instances, in which a transaction involves an unused limit, a percentage share of this unused limit is added to the outstanding amount in order to appropriately reflect the expected outstanding amount in case of a counterparty default. This reflects the assumption that for commitments the utilization at the time of default might be higher than the current utilization.

Credit Risk

Risk that customers may not be able to meet their contractual payment obligations. Credit risk includes \rightarrow default risk, \rightarrow country risk and \rightarrow settlement risk.

Credit Risk Exposure

All transactions in which losses might occur due to the fact that counterparties may not fulfill their contractual payment obligations. The Group generally calculates credit risk exposure as the gross amount of the exposure without taking into account any collateral, other credit enhancement or credit risk mitigating transactions.

Default Risk

The risk that counterparties fail to meet contractual payment obligations.

Economic Capital

A figure which states with a high degree of certainty the amount of equity capital the Group needs at any given time to absorb unexpected losses arising from current exposures.

Equity Method

Valuation method for investments in companies over which significant influence can be exercised. The pro-rata share of the company's net income (loss) increases (decreases) the carrying value of the investment affecting net income. Distributions decrease the carrying value of the investment without affecting net income.

Expected Loss (EL)

Measurement of loss that can be expected from a default event during a one-year period from → credit risk and → operational risk based on historical loss experience.

Expected Positive Exposure (EPE)

One year time average of the monotonically increasing average simulated positive future market values for a given portfolio of derivatives and/or securities financing transactions. This exposure measure follows external regulatory netting rules and credit risk mitigation via margining and collateralization and is used as exposure measure within the calculation of regulatory capital under the → Basel II → Internal Model Method.

Exposure at Default (EAD)

The expected amount of the credit exposure to a counterparty at the time of a default.

Exposure Class

Asset classes such as governments, corporates or retail, which are defined by → the Solvency Regulation within each credit risk measurement approach, that is standardized and internal ratings based approach.

Fair Value

Amount at which an asset or liability would be exchanged in a current transaction between knowledgeable, willing parties, other than in a forced or liquidation sale.

German Solvency Regulation (Solvabilitätsverordnung, SolvV)

German regulation governing the capital adequacy of institutions, groups of institutions and financial holding groups which adopted the revised capital framework of the Basel Committee from 2004, widely referred to as → Basel II, into German law.

IFRS (International Financial Reporting Standards)/Previously IAS (International Accounting Standards)

Financial Reporting Rules of the International Accounting Standards Board designed to ensure globally transparent and comparable accounting and disclosure. Main objective is to present information that is useful in making economic decisions, mainly for investors.

Internal Assessment Approach (IAA)

Internal credit assessment approach used in the calculation of regulatory capital requirements for non-externally rated securitization positions in relation to ABCP conduits.

Internal Model Approach

Subject to regulatory permission, the usage of internal value-at-risk models to calculate the regulatory capital requirement for market risk positions.

Internal Model Method (IMM)

A more sophisticated approach for calculating a regulatory exposure value (Exposure at Default) for derivative counterparty exposures as well as securities financing transactions by building the calculations on a Monte Carlo simulation of the transactions' potential future market values.

Internal Ratings Based Approach (IRBA)

The most sophisticated approach available under the → German Solvency Regulation for calculation of the regulatory capital requirements for risk positions allowing the Group to make use of its internal rating methodologies as well as internal estimates of specific other risk parameters.

Liquidity Risk

The risk arising from the Group's potential inability to meet all payment obligations when they come due or only being able to meet these obligations at excessive costs.

Loss Distribution Approach

A risk profile modelling technique, which mainly uses loss data to construct aggregate loss distributions based on Monte Carlo simulations.

Loss Given Default (LGD)

The likely loss intensity in case of a counterparty default. Its estimation represents, expressed as a percentage, the part of the exposure that cannot be recovered in a default event and therefore captures the severity of a loss.

Market Risk

The risk that arises from the uncertainty concerning changes in market prices and rates (including interest rates, equity prices, foreign exchange rates and commodity prices), the correlations among them and their levels of volatility.

Mark-to-market Approach

An approach to calculate the regulatory → Exposure of default value of derivative counterparty credit risk exposures as the current market value of the derivative plus an add-on amount which takes into account the potential future increase of the market value.

Netting Agreements

Bilateral agreements between the Group and its counterparties with regard to the included transactions which ensure that, if solvency or bankruptcy proceedings are initiated, only a single net amount is owed by one party to the other from the netting of all claims and liabilities with the Group having the right to terminate all transactions under the agreement unilaterally if the counterparty fails to perform an obligation owed under an individual transaction.

Operational Risk

Potential for incurring losses in relation to employees, contractual specifications and documentation, technology, infrastructure failure and disasters, projects, external influences and customer relationships. This definition includes legal and regulatory risk, but excludes → business and reputational risk.

Potential Future Exposure

Time profile of the 95th percentile of simulated positive market values for a given portfolio of derivatives and/or securities financing transactions including the effect of → netting agreements and collateral – calculated over the portfolio's entire lifetime.

Probability of Default (PD)

The likelihood or probability of default (PD) of a counterparty is assessed over the next twelve months time horizon and expressed as a percentage. The Group does not rate through the cycle. PD is the primary measure of creditworthiness of a counterparty. The numerical probabilities of default are mapped into a 26-grade → rating scale that is similar to → rating scales widely used by international → rating agencies.

Rating

The result of the objective assessment of the future economic situation – namely the → probability of default – of counterparties based on present characteristics and assumptions. The methodology for the rating assignment strongly depends on the customer type and the available data. A broad range of methodologies for the assessment of the → credit risk is applied, such as expert systems and econometric approaches.

Regulatory Trading Book and Banking Book

The regulatory trading book is defined in Section 1a of the German Banking Act. It consists of financial instruments and commodities held with trading intent or held for the purpose of hedging the market risk of other trading book positions; repurchase transactions, lending transactions and similar transactions which relate to trading book positions; name-to-follow transactions; and receivables directly related to trading book positions. Financial instruments and commodities assigned to the trading book must be tradable or able to be hedged.

The regulatory banking book comprises of all positions that are not assigned to the trading book.

Risk-weighted Assets (RWA)

Risk-weighted assets are positions that carry → credit, → market and/or → operational risk, weighted according to regulatory requirements. RWAs are regulatory capital requirements multiplied by 12.5, or in other words, capital requirements equal 8 % of RWA.

Securitization

A securitization transaction is defined as a transaction where payments depend on the performance of an underlying pool of exposures and investments in the securitization are subordinated. Subordination results in a ranking among investments in the securitization. This determines the order and the amount of payments or losses to be directed to the holder of the position, the waterfall structure.

Standardized Approach

The least sophisticated approach available under the → German Solvency Regulation for the calculation of the regulatory capital requirements. It measures → Credit risk either pursuant to fixed risk weights, which are predefined by regulation or through the application of external → ratings.

Value-at-risk

For a given portfolio, the value-at-risk is an estimate of the potential future loss (in terms of market value) that, under normal market conditions, will not be exceeded in a defined period of time and with a defined → Confidence level.

Wrong Way Risk

Risk that occurs when exposure to a counterparty is adversely correlated with the credit quality of that counterparty.

Impressum

Deutsche Bank Aktiengesellschaft
Theodor-Heuss-Allee 70
60262 Frankfurt am Main
Germany
Telephone: +49 69 9 10-00
deutsche.bank@db.com

Investor Relations:
+49 69 9 10-3 80 80
db.ir@db.com

Basel II Pillar 3 Report,
Annual Review 2009 and
Financial Report 2009 on the Internet:
www.deutsche-bank.com/09

Cautionary statement regarding forward-looking statements

This report contains forward-looking statements. Forward-looking statements are statements that are not historical facts; they include statements about the Group's beliefs and expectations and the assumptions underlying them. These statements are based on plans, estimates and projections as they are currently available to the management of Deutsche Bank. Forward-looking statements therefore speak only as of the date they are made, and the Group undertakes no obligation to update publicly any of them in light of new information or future events.

By their very nature, forward-looking statements involve risks and uncertainties. A number of important factors could therefore cause actual results to differ materially from those contained in any forward-looking statement. Such factors include the conditions in the financial markets in Germany, in Europe, in the United States and elsewhere from which the Group derives a substantial portion of the Group's trading revenues, potential defaults of borrowers or trading counterparties, the implementation of the Group's management agenda, the reliability of the Group's risk management policies, procedures and methods, and other risks referenced in the Group's filings with the U.S. Securities and Exchange Commission. Such factors are described in detail in the SEC Form 20-F of 16 March 2010 in the section "Risk Factors". Copies of this document are available upon request or can be downloaded from www.deutsche-bank.com/ir

